

**A Study to investigate the attitude of customers towards electronic banking: The case of a South African-based company.**

By

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*Thesis presented in partial fulfilment of the requirements for the degree of Master of Administration in Industrial Psychology at the University of the Western Cape*



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## DECLARATION

I TAFADZWA MHLANGA, hereby declare that this thesis is my own original work and has never been presented for the award of the Degree/ Degree to any University and I did not copy any of the work submitted from other student. I also declare that I have adhered to the University of the Western Cape's policy on plagiarism.

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**Date:** \_\_\_\_\_



## ABSTRACT

It is known that attitude plays a significant role in consumer decision process whether to adopt new technology or not. Differences in attitude towards a product or a service depend on the nature of the product, individuals and the duration in which the product has been in the market. Based on the Technology Acceptance Model (TAM), the current research study investigated the influence of gender, perceived ease of use, perceived usefulness, trust, social norm, computer confidence on attitude towards e-banking and intention to start or continue using internet/cell phone banking among company ABC customers. Company ABC is a South African-based financial institution which was officially launched in January 2015. With the benefits of e-banking outnumbering the benefits of cash, company ABC started accepting electronic payments only in 2015, and opened for cash transactions in 2016. The need to understand factors impacting on consumers' attitude and behaviour towards using technology motivated the researcher. A quantitative approach was used with the aim to understand the attitude of consumers towards e-banking.

207 participants took part in the study. The sample was made up of customers from company ABC. The e-banking attitude questionnaire consists of six scales measuring perceived ease of use, perceived usefulness, subjective norm, attitude, computer confidence, and intention to start to use or continue using e-banking. To measure the impact of computer confidence on attitude towards e-banking, a standardized computer attitude scale was adapted from a computer attitude scale which was developed by Loyd and Loyd (1985). Statistical analyses software packages such as SPSS (version 23) and LISREL (version 8.80) were utilised to measure the relationship between independent and dependent variables. The comprehensive measurement model was assessed by means of item parcelling. Both measurement and structural models showed good fit.

Item and dimensional analyses were conducted on the scales to identify poor items and ensure the uni-dimensionality of the subscales before calculating item parcels. T-test was conducted to determine whether gender differences exist in terms of attitude towards internet/cell phone banking. Regression analysis was used to identify significant predictors of attitude towards internet/cell phone banking. The hypotheses were analysed through structural equation model using the LISREL 8.80 software.

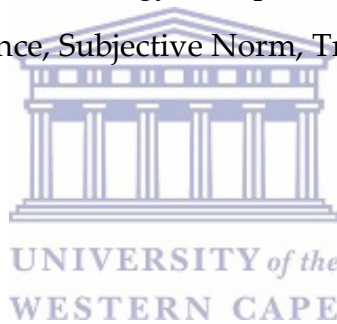
It is observed from the study that there are significant positive relationships between customers' attitude, trust in the e-banking system, subjective norm, perceived ease of use, perceived usefulness, computer confidence and intention to start or continue using e-banking. The results indicated perceived ease of use as a major predictor of attitude towards e-banking, explaining 35% of the variance, whilst perceived useful explained 22% of variance whereas trust explained 15% of the variance. Access to technological products such as access to a computer, smartphone ownership, access to internet and experience in the internet banking system had a stronger influence on attitude towards internet and cell phone banking. It was observed that, 18% of variance in attitude towards internet and cell phone banking was explained by ownership of a smartphone, whilst 21% of variance in attitude towards internet and cell phone banking was explained by access to computer, at the same time 29% of variance in attitude towards the internet and cell phone banking was explained by access to computer, whereas 34% of variance in attitude towards internet banking was influenced by experience in the cell phone internet banking system.

In order to attract new e-banking users, a belief in usefulness of electronic payment must be developed. This can be achieved through raising awareness of the usefulness of e-banking. Awareness can be raised by increasing visibility advertisements of internet

banking and cell phone banking which are currently underrepresented in the media. Most importantly, Capitec, IMB, BIDVEST, and Standard bank are advised to focus on the speed of interbank transactions to enhance the usefulness and efficiency of their service. Banks should also consider focusing on preventing intrusion, fraud and identity theft. To ensure security, banks can also introduce biometric authentication technology. Bank managers are also advised to organise computer training courses to increase the general computer confidence of the consumers.

**Key words**

Electronic Banking, Attitude, Technology acceptance model, Adoption, Computer Confidence, Computer Confidence, Subjective Norm, Trust.



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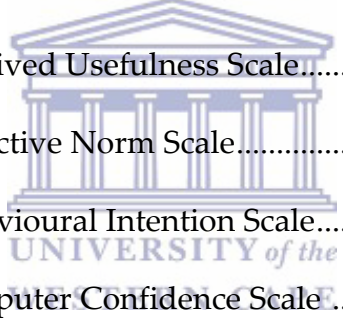


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# Chapter One

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## INTRODUCTION

### 1. 1 INTRODUCTION AND BACKGROUND TO THE STUDY

The sudden increase in online business in the digital era has drastically changed the way in which businesses operate for instance some organisations like Amazon do not have any physical stores (Singh, 2004). Among other sectors, the financial sector is one of the sectors which have drastically changed due to the introduction of technology. The financial sector introduced branchless banking in the form of Automated Teller Machines (ATMs), telephone banking, internet banking, and mobile banking. Internet banking is a method of electronic banking that allows users to perform a range of financial and non-financial services through a bank's website and an application (Santouridis & Kyritsi, 2014). In the current study electronic banking/ e-banking refers to internet and cellphone banking.

According to Yoon (2010), the first electronic banking transactions which used internet were established in 1994 by Stanford Federal Credit Union (SFCU), it spread quickly in the world allowing its users to have access to bank services any time of the day at a lower cost and removing the anxiety brought about by cash carrying. Singh (2004) holds that, banking in South Africa started in Cape Town in 1860 under the influence of British and Dutch Traditions. In comparison to other developing countries, South Africa has a well-developed and established banking system which complies with international best practices (Singh, 2004). Although there are various recognised banks in South Africa, the

South African banking environment is dominated by four major banks namely: the Amalgamated Banks of South Africa (ABSA), Standard Bank, Nedbank, and First National Bank (FNB). Singh (2004) holds that, there has been an increase in usage of Internet Banking in South Africa since 1996. From 1996 onwards, South African banking customers have gained access to online banking, with ABSA being the first bank to offer online services, followed by Nedbank, Standard Bank, FNB respectively (Singh, 2004).

Since the introduction of Internet Banking in South Africa, mobile banking users have been able to use this service to make payments and transfers at any time of the day from any location without having to physically visit any of the branches of the traditional bank for their banking services (Venkatesh, Morris & Speier, 2003). South African financial institutions integrated the modernised and advanced security mechanisms such as advanced verification and authentication principles, incorporated with technologies such as Short Message Service (SMS). All these security mechanisms are in place to ensure that customers experience is safe and secure. However, in comparison to other electronic methods of payment such as ATMs and telephone banking, internet banking and cell phone banking in South Africa is still in its infancy. This is not only characteristic of the South African mobile banking system but is the trend in Africa at large (Barker, 2011; Madhuku, 2014; Vankatesh et al, 2002).

Although there has been substantial research in this field in several developed and Asian countries, a review of the literature has indicated that this field is under-researched in developing countries (Madhuku, 2014). The availability of modernised systems remains unnoticed, underused by the customers, with the reasons varying from trust, computer confidence, social-cultural factors, perceived ease of use, gender variables amongst others. Clearly, there is a need to investigate potential factors impacting on intentions to transact using cell phone and internet banking in South Africa.

One of the organisations that rely heavily on internet and cell phone banking usage is company ABC. Company ABC is a South African-based financial start-up money transfer company which started accepting electronic payments only in 2015, and opening for cash payments in 2016. Operating in a developing country where the adoption of electronic banking is still low, company ABC faces a significant challenge in terms of encouraging customers to transact electronically. The current study aims to recommend strategies to deal with challenges faced by ABC, so that it adapts its current business strategy with the environment.

### **1.1.1 Business Model for ABC Company**

ABC is an international startup money transfer company which was set to facilitate the money transfer. The introduction of ABC led to a significant drop in the fees migrants pay to send remittances. The company is competing with the big money transfer operators such as Western Union and Moneygram. Using the mobile money technology ABC differs from the traditional agent based money transfer operators that run cash-to-cash models, which are expensive, slow and outdated. The company offers a cashless system where customers have to pay in South Africa through a bank account. ABC then pays out in the receiving countries using mobile money. South Africa was identified as the most expensive country from which to send low-value remittances. The World Bank said that an average rate of 18.69% was charged to send money from South Africa to neighbouring Southern African Development Community (SADC) countries. The global remittance price average is 8.9%. The World Bank said in 2014 rates of up to 29% were still being charged on money transfers between some countries (Consultative Group to Assist the Poor, 2008).



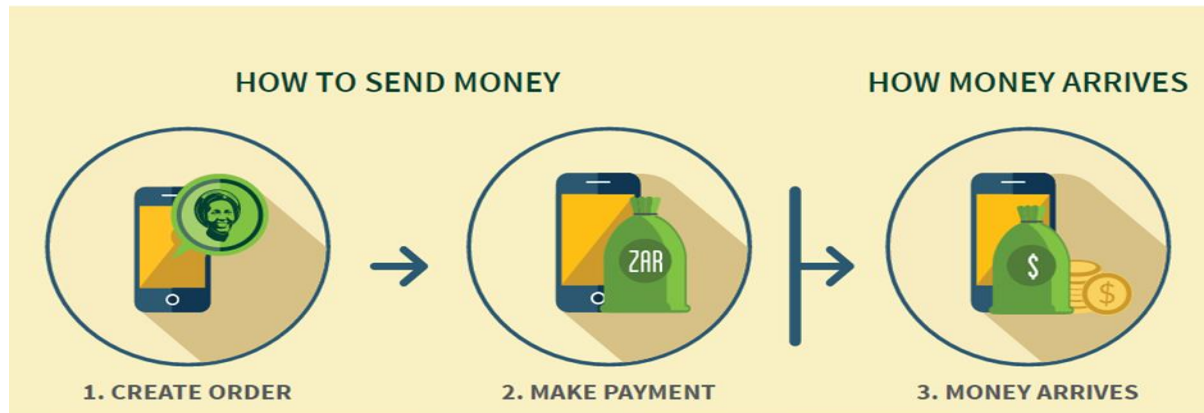
In order to send money through company ABC, customers complete a one-off registration with the company's agents, who would capture basic information in order to comply with the Financial Intelligence Centre Act (FICA). ABC started as an online business, when it launched ABC did not have branches. All customers needed to do was log on to the website using their cell phone number; add a recipient and their mobile number (the person they are sending the money to). ABC buys US dollars in bulk from the Reserve Bank and sells the US dollars to recipients in other countries.

### **1.1.2 Money Transfer Procedure**

Money transfer procedures follow a three step procedure: creating an order, whereby the sender identifies the person whom they wish to send money to; paying for the order; cash out to recipient. This is also explained diagrammatically below on figure 1.1. ABC differs from its competitors on payment method and on cash out method. Competitors such as Western Union, Moneygram, Eco-Cash and Mukuru.com have agent based cash-to-cash models whereby customers visit their branches and pay cash and the recipient receive cash as well. ABC transfer procedure was different in the sense that payment were made via the bank only (electronic payments exclusively). Initially this system was designed to take electronic payments only. The idea was to get rid of cash since handling cash is expensive and risky. To attract customer to adopt their service they charged the lowest fees approximately 5% of the transaction value whilst the average of its competitors was 18.8% where the maximum transaction fee was 28% (Gillian, (2015).

Figure 1.1

*Money Transfer Procedure for Company ABC*



(Adapted from ABC)

Customers were excited with this cheapest service and they signed up in numbers. Unexpectedly, the availability of modernised money transfer service remains underused by the customers, with the reasons being that they do not have their own bank accounts, trust issues, perceived ease of use and perceived usefulness. As a result of resistance to change, ABC opened for cash payments in 2016, customers are now able to pay for their orders at South African retailers such as Shoprite, PEP, Spar, and Boxer. Since the introduction of cash payments, ABC experienced exponential growth, as majority inactive customers started transacting.

Before the introduction of cash payments, the researcher used to work closely on a daily basis with consumers, witnessing behaviour which needs further investigation. For instance, customers engage in behaviours such as travelling to the store to transact through cell phone banking and internet banking, and a significant number of customers who used to transact online before the introduction of cash transactions reverted back to cash payments. The customers' behaviour spurred the researcher to investigate why some customers use both mobile and internet banking while others prefer to use the traditional cash transaction type of banking.

Investigating factors impacting on intention to use cell phone and internet banking benefits company ABC, financial institutions, as well as individual consumers. Company ABC prefers electronic payments because it is the cheapest and the most secure payment method in comparison to cash payments. Furthermore, electronic payments reduce overhead expenses, specifically costs related to building and maintenance of physical branches, marketing, and labour. Electronic payments also allow consumers to save more customers and provide access to consumers residing outside the branch networks creating opportunities for effective cross-selling (Barker, 2011).

Unlike products, a service is produced and consumed simultaneously; meaning that a service provider and a customer have to come together each time a service is rendered. This can be described as inseparability. As a result, customers are most likely to have different experiences each time they use the service because they get served by different people. Online transactions enable company ABC to enjoy a competitive advantage over its competitors in the sense that electronic transactions allow customers to transact without coming into contact with anyone, which minimizes contact with service providers resulting in increasing service satisfaction. To individuals, internet banking is the most convenient and efficient way of making payments. In the South African context where there is high crime rate and theft, online payment is the safest and secure method over cash payment since customers do not have to visit physical branches or carry cash. In addition, consumers have better access to information, transaction processing efficiency is increased and consumers have control over their transactions (Barker, 2011; Sanli & Hobikoglu, 2015).

Regardless of the benefits associated with internet banking presented above, several studies have indicated disadvantages of internet banking especially in the banking

environment of developing countries. Commonly found in the developing countries contexts, are factors such as; security concerns which reduce the interest of both users and potential users (Asad, Mohajerani & Noursersesh, 2016; Madhuku, 2014). Research holds that, unauthorized transactions, lack of Internet or computer access by consumers, basic computer skills, computer confidence , limited availability of broadband, geographical locations like rural areas; income levels, demographic characteristics, unavailability of adequate information about electronic banking, fear of scams, hacking attacks and identity theft act as moderating factors (Barker, 2011).

Despite the prevalence of drawbacks impacting on the use of internet banking, most financial organisations encourage their clients to transact using online platforms by constantly putting security measures in place to avoid scams. Addressing the security concerns is not the only factor working against the use of online services, customers' abilities, attitudes and beliefs also influence their decision to use online services. Paucity exists on the factors influencing intention to use or continue to use online services. The current study aims to explain and predict the attitude consumers towards internet and cell phone banking by specifically investigating the relationships among perceived ease of use, perceived usefulness, trust, demographics variables, social norm, computer confidence on attitude towards e-banking and intention to start or continue using internet/cell phone banking. The overarching research question guiding the study is therefore, "What are the relationships among gender, perceived ease of use, perceived usefulness, trust, social norm, computer confidence on attitude towards e-banking and intention to start or continue using internet/cell phone banking among company ABC customers?"

## 1.2 SUB-RESEARCH QUESTIONS

The overarching research question is further subdivided into the following minor research questions:

- I. Does trust towards electronic banking have an effect on customer's attitude to start using/continue using electronic banking service?
- II. Is there a relationship between perceived ease of use of electronic banking and customers' attitude to start using/continue using electronic banking service?
- III. Does perceived usefulness of electronic banking have an effect on customers' attitude towards electronic banking services?
- IV. Does computer confidence have an impact on attitude towards electronic banking?
- V. Does subjective norm have an effect on attitude towards electronic banking?
- VI. Are there differences in attitude towards e-banking in terms of gender?
- VII. Is there a relationship between access to technology based products (prior exposure to e-banking, availability of resources like internet, computer, and smartphone) and attitude towards e-banking?
- VIII. How well do trust, perceived use, perceived usefulness, subjective norm and computer confidence predict e-banking adoption?

## 1.3 RESEARCH OBJECTIVES

- IX. To measure the impact of trust towards electronic banking on customers attitude to start using/continue using the service.
- X. To investigate the relationship between perceived ease of use of electronic banking and customers attitude towards e-banking.
- XI. To measure the effect of perceived usefulness of electronic banking on customer's attitude to start using/continue using the service.
- XII. To measure the impact of computer confidence on customers attitude to start using/continue using the service.

- XIII. To measure the relationship between subjective norm and customers' attitude towards electronic banking.
- XIV. To determine the impact of gender on customers attitude to start using/continue using electronic banking service.
- XV. To determine the impact of access to technology based products (prior exposure to e-banking, availability of resources i.e. internet, Smartphone and computer) on customers attitude to start using/continue using electronic banking service.
- XVI. To assess the extent to which these factors interact to predict customers' intention to adopt electronic banking.

#### 1.4 SIGNIFICANCE OF THE STUDY

It is hoped that this research study will have several theoretical contributions and practical implications by improving knowledge about developing intervention strategies to increase the use of electronic banking. Financial and retail organisation will be equipped with the knowledge on some of the factors that influence the use of online banking services. The results will also value add to bank managers in establishing better and more practical security and control policies that would facilitate the use of e-banking.

With regards to the organisation that has been chosen for the study, the study will help reduce company ABC's costs associated with cash transactions by attracting more customers to use e-banking. Product specific study would also provide risk communicators needed by company ABC to design more effective communication strategies to increase usage of e-banking which in turn influences the adoption of Internet banking amongst company ABC customers. The fundamental model employed in the current study will also help to explain and predict attitude of consumers towards e-banking.

## 1.5 STRUCTURE OF THE THESIS

**Chapter One** presented background information about e-banking and the banking environment of the South African context. The problem statement, research objectives, research questions and significance of the study were also discussed in chapter one. It concluded by defining key terms.

**Chapter Two** provides a theoretical framework which informs the research study and a critical analysis of the existing literature about the phenomenon. The Technology Acceptance model is described and evaluated followed by the development of a structural model for the current research study. This literature study chapter contains an analysis of the main constructs of the study providing empirical evidence of these constructs. The chapter is divided into sub-sections divaricating factors impacting on adoption of e-banking, concluding each section by formulating a hypothesis.

**Chapter Three** presents the method which was used to test the hypotheses postulated in the study. The methodology chapter describes the research design, population under study, sample, sampling technique, advantages and disadvantages of the sampling method, data gathering procedure, data analysis technique and ethical consideration.

**Chapter Four** entails a presentation of tables, graphs summarizing inferential results. The decisions on the statistical hypotheses are also presented in this chapter.

**Chapter Five** is a discussion of the research findings and the implications of the results. A comparison of the findings with other studies in the similar contexts will be provided as well. This chapter will be concluded by providing a recommendation to future research, directions for future studies and limitations are also outlined in this chapter.



## 1.6 SUMMARY

In surceasation, the research problem and the background of the study have been provided. The development of the argument has culminated into the postulation of the overarching research question which seeks to understand how intention and attitude towards e-banking is influenced by trust, subjective norm, perceived ease of use, perceived usefulness, computer confidence and gender variables. The motivation to conduct the study was to increase the profitability of company ABC by reducing cash related expenses and to find strategies to communicate the benefits of transacting online. The sub-research questions, the research objective, the significance were also discussed followed by the definition of key terms. The chapter concludes by giving a chapter outline of the thesis.





# Chapter Two

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## LITERATURE REVIEW

### 2.1 INTRODUCTION

A critical review of the literature carefully categorizes pool findings which can lead to valuable insights and clear research directions. Therefore, journal publications both peer reviewed and published were consulted since they represent the highest level of research. The chapter starts off with a detailed explanation of Technology Acceptance Model followed by a discussion of the adjusted Technology Acceptance model and the innovation diffusion theory which informs the research process. Although key research figures in the field of acceptance of electronic banking acknowledge the TAM model as an efficient model they argue that technology acceptance behaviour is influenced by various factors which are not represented in the model. The TAM argues that, one's actual use of a technology system is inclined directly or indirectly by the user's behavioural intentions, attitude, perceived usefulness of the system, and perceived ease of the system other factors other than these are considered as moderating factors. However, the researcher added other factors such as subjective norm, gender, and computer confidence. The chapter concludes by postulating hypotheses to be tested in the present study.

### 2.2 TECHNOLOGICAL ACCEPTANCE MODEL

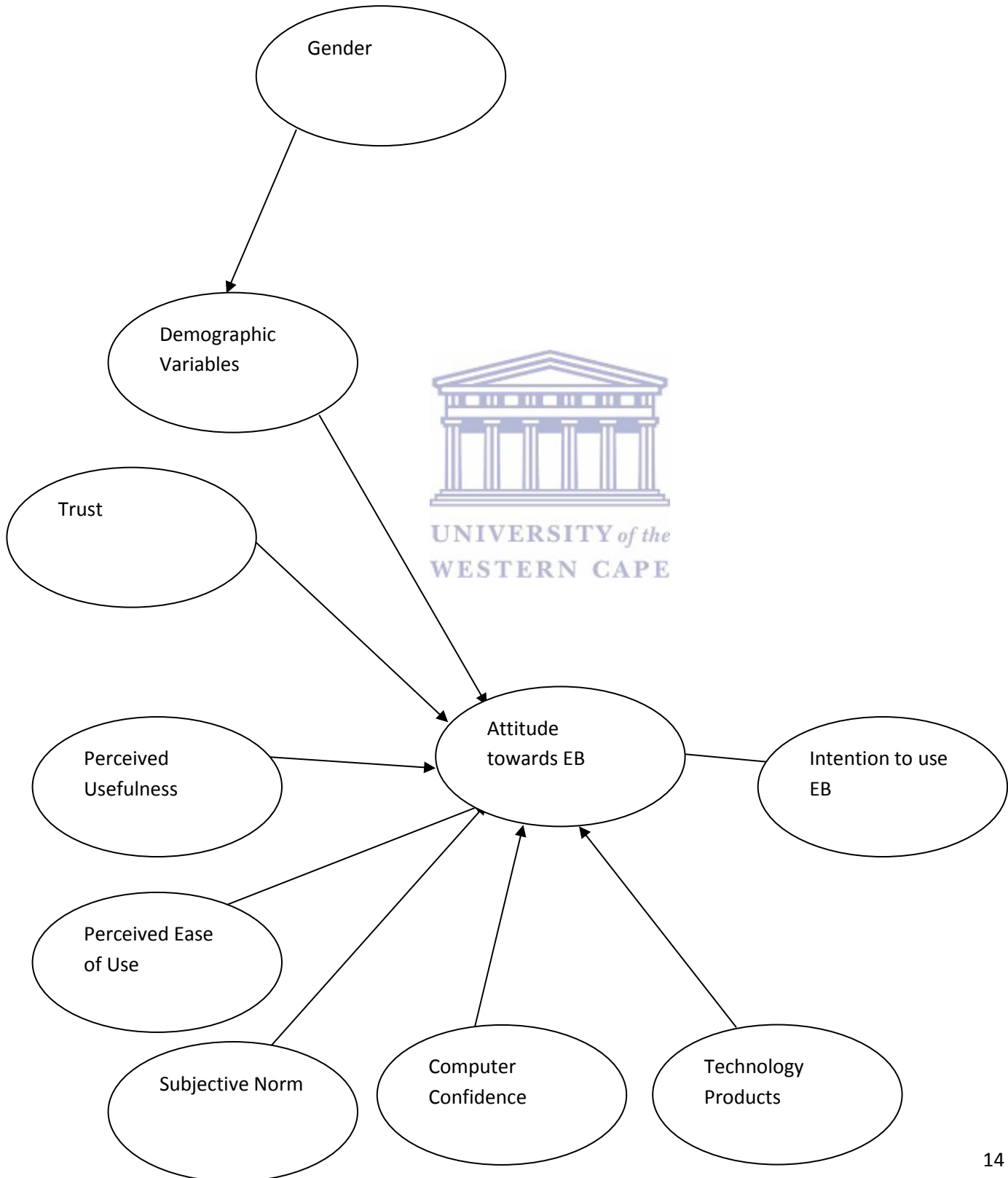
The Technology Acceptance Model (TAM) developed by Davis (1989) has been found to be the most parsimonious, most accepted and efficient model for predicting the acceptance of Information Technology and key research figures in this field have used this model to investigate factors impacting on the adoption Information Technology (Ariffa, Zakuana, Jusoha & Baharia, 2012; Davis, 1989; Malhotra & Singh, 2009; Obeka,

2012; Venkatesh & Davis, 1996). Based on two cognitive beliefs; perceived usefulness and perceived ease of use: The TAM attempts to explain and predict user acceptance of various types of technology. According to this model, one's actual use of a technology system is influenced directly or indirectly by the user's behavioural intentions, attitude, perceived usefulness of the system, and perceived ease of the system. In addition to the direct effect of the above mentioned two cognitive beliefs, the TAM also acknowledges the impact of external factors which affect the intention and actual use of technology as moderating factors (Davis, 1989).

Research findings have provided adequate research evidence to support the suitability of the TAM for explaining and predicting acceptance of various IT systems. However, Moon and Kim (2001) (as cited in Madhuku, 2014) argues that the constructs do not fully explain and predict factors that influence a user's acceptance. As a solution, several studies specifically focusing on customers' attitude towards adopting e-banking (Al-Somali, Gholami & Clegg 2009; Karjaluoto, Mattila & Pentto, 2002; Sathyem 1999; Suh & Han 2002) have included other factors of interest such as trust, subjective norm, demographic variables, self-efficacy, quality of Internet/mobile connectivity, culture, customers' awareness of the benefits, perceived playfulness, perceived enjoyment, etc. Significant to this study, the researcher is interested in focusing on the following independent variables: gender, subjective norm, and trust of the Internet banking system, and computer confidence in addition to the TAM's original variables. The researcher will focus on company ABC's customers, the cashless money transfer in Africa. Figure 2.1 depicts a diagram indicating TAM's modified model.

Figure 2.1

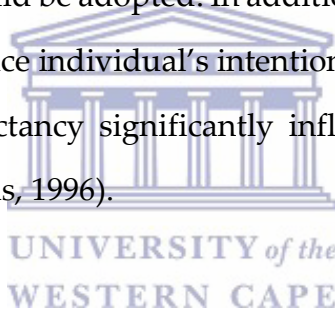
*Modified Technology Acceptance Theories*



## 2.3 UNIFIED THEORY OF ACCEPTANCE AND USE OF TECHNOLOGY THEORY

Unified Theory of Acceptance and Use of Technology (UTAUT) theory holds that there are four key constructs: 1) performance expectancy, 2) effort expectancy, 3) social influence, and 4) facilitating conditions. Performance expectancy, effort expectancy, and social influence are direct determinants of usage intention and behaviour, while facilitating condition is a direct determinant of user behaviour (Venkatesh & Davis, 1996).

In UTAUT, performance expectancy is driven from perceived usefulness (Technology Acceptance Model), relative advantage, extrinsic motivates, job-fit, and outcome expectations. In mobile banking studies, the greater the perceived relative advantage, the more likely mobile banking would be adopted. In addition, perceived usefulness, relative advantages significantly influence individual's intention to adopt mobile banking. Most importantly performance expectancy significantly influences people to adopt mobile technologies (Venkatesh & Davis, 1996).



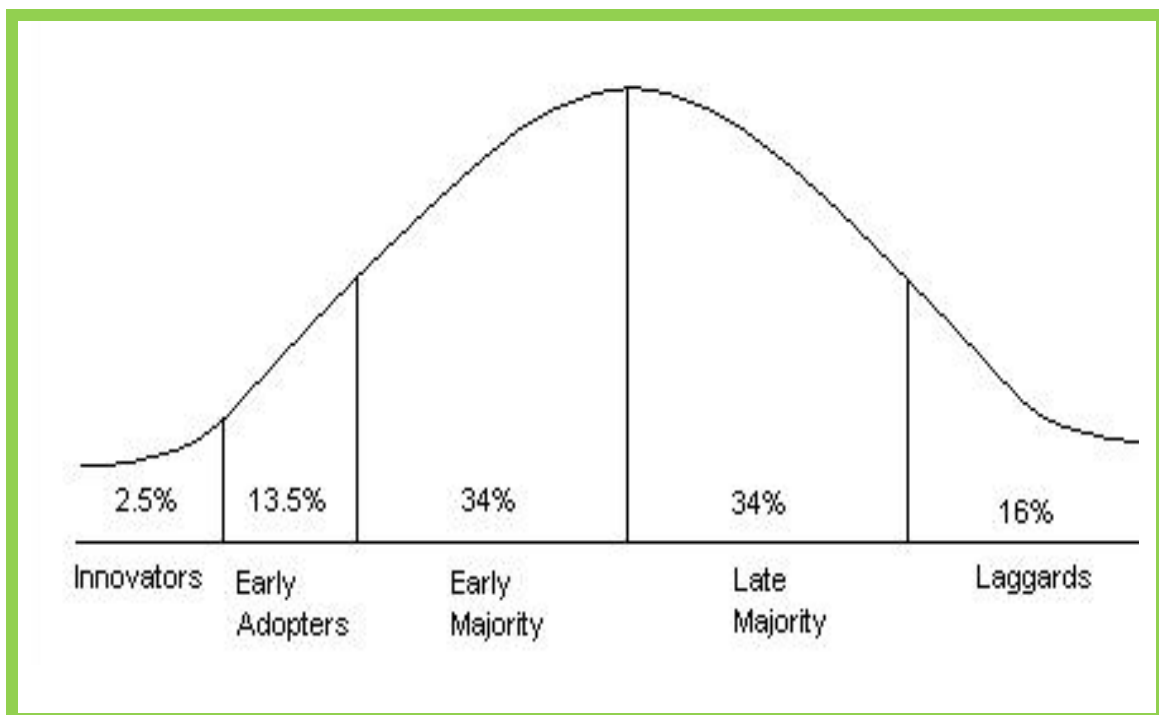
## 2.4 INNOVATION DIFFUSION THEORY (IDT)

Innovation adoption theory examines how ideas are spread among people. The theory explains the conditions that increase or decrease the likelihood that an innovation, idea, product, will be adopted by members of a given culture. It argues that, innovations are not adopted by all individuals in a social system at the same time. Instead, they tend to be adopted in a time sequence. Therefore, consumers are classified into adopter categories based on time they take for them to begin using the new idea. It is crucial for organisations to identify which category certain individuals belong to, since the short-term goal of most organisational is to facilitate the adoption of an innovation. Innovation adoption theory holds that adoption of new technology is caused by human interaction

through interpersonal networks. This implies that, if the initial adopter discusses it with two members of a social system, and these two become adopters who pass the innovation to other peers resulting in expansions of an innovation. Adopter distribution follows a bell-shaped curve over time (Rogers, 2010).

Figure 2.2

*Adopter categorisation on the basis of innovativeness (Rogers, 2010)*



Consumers who fall in the early adopter category seem to have the greatest degree of opinion leadership in most social systems and they provide advice and information sought by other adopters about an opinion. Members of the early adopters adopt new innovation before the average of a social system. Early adopters deliberately take some time before completely adopting a new technology. The late majority adopt new technology after the average member of a social system. They are a sceptical group. Their adoption may be as a result of economic necessity and in response to increasing social pressure. Laggards are the last group to adopt an innovation (Rogers, 2010).

Innovation can be evaluated based on product characteristics which involve five constructs: relative advantage, compatibility, complexity, trialability, and observability. Relative advantage refers to the degree to which an innovation is perceived to be better than the idea it supersedes (Rogers, 1983). Research suggests that when users perceive that a new technology has distinct advantages over the old technology, the likelihood of users adopting the technology increases. In the financial industry benefits of such services are; immediacy, convenience, and affordability to customers.

Rogers (1995) generally defined compatibility as how an innovation is assumed to be consistent with socio-cultural values and beliefs, experiences, as well as the needs of potential adopters. Compatibility is also crucial to innovation because conformance to a user's lifestyle can considerably increase the rate of adoption.

As for complexity, an innovation perceived as complex or difficult to use is unlikely to be adopted (Rogers, 1995). Rogers (1962) defined complexity as the extent to which an innovation can be considered relatively difficult to understand. Given the user-friendly interfaces of mobile banking services, users view them as easy to use, subsequently

forming positive attitudes towards them (Lin, 2011). If not perceived as user friendly, the perceived complexity of the innovation inhibits users' intention to use mobile banking service

Rogers (1995) defines trialability as to the high likelihood of individuals to adopt an innovation when they can first evaluate it. Potential adopters who are allowed to experiment with an innovation feel more comfortable with it and are more likely to adopt it. Finally, an innovation which is visible and facilitates communication among an individual's personal networks creates positive attitudes towards it (Rogers, 1995).

## **2.5 ATTITUDE TOWARDS E-BANKING AND INTENTION TO USE E-BANKING**

Attitude refers to an individual's positive or negative feelings about performing the behaviour (Davis, 1989). Attitude is made up of beliefs about engaging in the behaviour and the associated evaluation of the belief. The more favourable attitude a person has towards a given product or service, the more likely that person is to buy or use the product or service (Ajzen, 1991). Attitudes develop over time through a learning process affected by reference group influences, past experience and personality. There are different dimensions of attitudinal belief toward an innovation which could be measured using the five perceived attributes (relative advantage, compatibility, complexity, and trialability of the innovation (Ajzen, 1991).

Academic research has proven that, attitude plays a key role in predicting the adoption or use of a new product or a service (Malhotra & Singh, 2009; Mian & Rizwan 2013; Rogers, 2010). Narrowing this phenomenon of technology acceptance in the field of e-banking, there is substantial evidence which supports that customer's attitude towards Internet Banking affects intention to start or continue using internet banking. In a study

conducted by Madhuku (2014) in Gauteng, it has been found that users with a positive attitude towards mobile banking services have a positive behavioural intention to use the services. In a comparative study which was conducted in Taiwan, Chen (2013) noted that, the hypothesis that the relationship between attitude and usage of internet banking is significant. However, Chen (2013) investigated differences in attitude towards internet banking between frequent users and infrequent users of internet banking.

Chen (2013) noted that frequent users tend to have a more positive attitude towards usage of internet banking than infrequent users. Tiago, Muguel, Manoj (2014) also noted that where there is organizational and technical infrastructure to support customers adoption of electronic banking increases. Bashir and Madhavaiah (2013) in their study which was conducted amongst Indians, attitude was reported to have a strong impact and to be a primary positive determinant of consumers' intention to use internet banking. In contrast, Bashir and Madhavaiah (2013) found that attitude acts as a mediating variable and exerts a strong impact on intention to use internet banking.

Furthermore, in a study which was conducted by Madhuku (2014) amongst the South Africa population, it has been found that although consumers have a positive attitude towards cell phone banking and internet banking variations in attitude towards internet and cell phone banking were recorded. It has been found that South Africans have a more positive attitude towards cell phone banking than internet banking. As a result, respondents had a positive behavioural intention to start or continue using Internet and cell phone banking with a more positive attitude towards cell phone banking than internet banking. The current study aims to explain the impact of attitude on behavioural intention to start or continue using e-banking. As a result, the hypothesis below was developed.



*H1: Customers' attitude towards e-banking services has a positive effect on their intention to start using/continue using the service.*

## **2.6 TRUST IN THE E-BANKING AND ATTITUDE TOWARDS E-BANKING**

Trust refers to the “perceived credibility and benevolence of a target” (Davis, 1989, p. 320). There are three forms of trust, and one form of trust leads to another form of trust. Deterrence-based trust is linked to the threat of punishment and is seen as a negative factor, whereas in calculus-based trust refers to the reward to be received from a relationship because of fulfilling the actions is seen as a positive factor. Knowledge-based trust is linked to knowledge of the other trading partner (that is the trustee), which allows the trustor to understand and predict the behaviour of the trustee. The key factor at this level of trust is the information derived out of a relationship over time that allows one trading partner to predict the behaviour of another trading partner. Identification-based trust is based on empathy and common values with the other trading partners' desires and intentions to the point that one trading partner is able to act on or as an agent for the other with the evolution of time (Davis, 1989).

Trust is arguably the most factor impacting on attitude towards internet banking and the adoption of internet banking (Bashir & Madhavaiah, 2013; Chen, 2013; Madhuku, 2014; Mian & Rizwan 2013 Sonja & Rita, 2008). Previous research shows that trust has a significant positive effect on the intention to adopt or to continue using electronic banking (Alqahtani, Abadi, Mayhem, 2012; Obeka, 2014; Rogers, 2010). Therefore this means that when trust in the e-banking increases customer's attitude towards e-banking increases. Obeka (2014) further explains that trust is more crucial and complex in e-banking environment than general and traditional commerce due to its uncertain environment. Similarly, Alqahtani et al (2012) found that 45.5% of the population of Saudi Arabia

believed that security, fraud, and hacking were crucial to the adoption and use of E-Commerce.

In a recent study conducted by Madhuku in 2014 in Gauteng province, it has been found that the buyers were worried that their personal information and money will be transferred to third parties without their knowledge. This means that trust in internet banking and its infrastructure reduces customer's transaction-specific uncertainty and related risks associated with it. As a result, the existence of trust in a relationship is a sort of insurance against risks and unexpected behaviour. Although trust has been reported to be the most vital factor among South Africans Madhuku (2014) found trust in cell phone banking seems to be higher than internet banking amongst South Africans.

Although trust has a direct effect on the intention to start or to continue using e-banking, attitude towards e-banking has a moderating effect on the relationship between trust and intention to adopt e-banking. This is supported by the findings of a study which was conducted in Portugal by Tiago et al. (2014) who found that individuals tend to have a positive attitude towards to e-banking are most likely to take risks or to have trust in a new service especially when there is reputation and assurance against risk.

Therefore we hypothesise that:

*H2: Attitude towards e-banking is influenced by customer's level of trust in the internet banking system.*

## 2.7 PERCEIVED EASE OF USE OF INTERNET BANKING AND ATTITUDE TOWARDS E-BANKING

Perceived ease of use “refers to the extent to which a person believes that using particular system would be free of effort” (Davis, 1989, p. 320). The direct effect of perceived usefulness on attitude towards e-banking was supported by a number of researchers (Bashir & Madhavaiah, 2013; Chen, 2013; Kejong & Yoon, 2003; Madhuku, 2014; Martins, Oliveria & Popovic, 2013; Mian & Rizwan 2013; Obeka, 2012; Rogers, 2010; Tiago et al, 2014; Yi-Shun, Yu-Min, Hsin-Hui & Tzung-I, 2003).

This implies that perceived ease of use had a positive impact on customers’ attitude towards e-banking. This emphasizes the relationship between perceived ease of use and attitude towards internet banking. In order to increase usage of e-banking, it is important that banking system becomes easy to use and learn. This implies that when mobile banking services are easy to use, retail banking clients feel that they will exert less effort to operate the services, leading to the development of a positive attitude towards usage. In a study conducted by Rogers (2010), perceived ease of internet use of banking was found to be negatively related to internet banking adoption. Clearly, this simply means that when a customer perceives usage of internet banking to be difficult they do not adopt or continue to use internet banking. However, a negative relationship between perceived ease of use and adoption of e-banking is most likely to be recorded to first-time users or to users who do not have experience with e-banking. This confirms the findings of Chung and Lee (as cited in Alqahtani et al., 2012) who holds that consumers who have had prior experience of buying online are more likely to adopt electronic banking.

Although Madhuku (2014) found a positive relationship between perceived usefulness and attitude towards E-banking among South Africans, significant differences in attitude

between cell phone banking users and internet banking users were recorded. It has been found that cell phone banking was found to be more preferred by South Africans because it is perceived to be easy, quicker and more convenient than internet banking. This led to the formulation of the hypothesis stated below:

*H3: There is a positive relationship between perceived ease of use and customer's attitude towards e-banking.*

## **2.8 PERCEIVED USEFULNESS OF INTERNET BANKING AND ATTITUDE TOWARDS E-BANKING**

Perceived usefulness refers to “the degree to which consumers believe that trading on particular website would increase the effectiveness of the shopping” (Shih & Fang, 2004, p. 354).

There is substantial evidence that perceived usefulness of internet banking is associated with customer's attitude towards e-banking (Bashir & Madhavaiah, 2013; Chen, 2013; Kejong & Yoon, 2003; Madhuku, 2014; Mian & Rizwan 2013; Malhotra & Singh, 2009; Tiago et al., 2014; Yi-Shun et al., 2003). Alqahtani et al. (2012) explains that the greater the perceived relative advantage, the more likely mobile banking would be adopted. Consequently, one can argue that perceived usefulness has a significant effect on the adoption internet banking because relative advantages of internet banking significantly influence individual's intention to adopt mobile banking by changing someone's attitude towards e-banking. Similarly, Martins et al. (2013) illustrates that customer's perception of the usefulness of internet banking influence people to use mobile services.

In agreement with the impact of perceived ease of use, Kejong and Yoon (2003) found that perceived ease of use has a significant effect on usage of internet banking amongst

frequent users. In a recent study conducted by Madhuku (2014) amongst the South African population, it has been also found that retail banking clients have a positive attitude towards mobile banking services usage if they perceive the services to be useful to conducting their banking transaction. Kejong and Yoon (2003) also found that perceived usefulness has the most significant impact on usage of internet banking amongst the Chinese population.

Alqahtani et al. (2012) argues that although perceived ease of use has a direct effect on customers' attitude towards e-banking, lack of awareness of benefits associated with internet banking has been reported to play a key role in the adoption of internet banking. Madhuku (2014) further explains that when customers realize obvious benefits offered by Internet banking, they are more likely to have a positive attitude towards the service resulting in the adoption of internet banking. Therefore, the following hypothesis is postulated:

*H4: The customer's attitude towards e-banking is influenced by perceived usefulness.*

## **2.9 COMPUTER CONFIDENCE AND ATTITUDE TOWARDS E- BANKING**

Kinzie, Delcourt, and Powers (1994) holds that an individual's confidence in his or her ability, may impact the performance of tasks. Computer confidence refers to individuals' beliefs about their capabilities to use computers and apply these capabilities to other computer tasks (Compeau & Higgins, 1995). Computer confidence comprises of three dimensions; namely, strength, magnitude, and generalisability (Compeau & Higgins, 1995). The magnitude of computer confidence refers to the levels of support an individual requires. Individuals who have high magnitude believe that they can complete a task with less support. The strength of computer confidence is the individual's confidence in beliefs of their capabilities in using computers. The dimension of generalisability refers

to different levels of beliefs in using computers in various situations such as various software and operating systems (Compeau & Higgins, 1995). Confidence is also linked to the belief in one's ability to mobilize the motivation, cognitive resources, and courses of action needed to meet given situational demands (Wood & Bandura, 1989, p. 408).

Among the several factors that impacting on customer's attitude towards e-banking, computer confidence has been indicated to play a crucial role in determining whether a customer adopts electronic banking or not (Ariffa et al., 2012; Sam, Othman, & Nordin, 2005). Computer confidence has a major impact on an individual's expectations towards using computers and individuals who do not see themselves as competent computer users tend not to use computers. Sam et al., (2005) further clarifies people who have a positive computer attitude were more likely to use the internet for product and service information. Computer attitude can be viewed as perceptions of computer usefulness and measured as one's perceived confidence for the different domain-specific skills with respect to computer use (Sam et al., 2005). A research study has shown that computer confidence is a significant predictor of e-banking adoption. Since computer attitude is multi-dimensional, computer attitude affects an individual's computer anxiety, which in turn, influences the perceived ease of use, perceived usefulness, and their intention to start or to continue using cell phone banking. Therefore, based on the above argument, the following hypothesis is postulated:

*H5: The intention to adopt e-banking is influenced by computer confidence.*

## **2.10 SUBJECTIVE NORM AND ATTITUDE TOWARDS E-BANKING**

Subjective norm- refers to the perceived social pressure to perform or not to perform the behaviour (Ajzen, 1991). Subjective norm is linked to the idea that people often act based

on their perception of what others think they should do, and their intentions to an attitude towards a behaviour is potentially influenced by people close to them. Generally, subjective norm refers to social influence which refers to the degree to which an individual perceives that he/she should use the technology. In addition, social influence social media such as Facebook, television adverts play a key role in influencing individuals in adopting a technology.

Continuing research efforts on the impact of social norm in the adoption of e-banking indicates that subjective norm is the least valuable factor amongst all the factors (Bashir & Madhavaiah, 2013; Chen, 2013; Madhuku, 2014; Tiago et al., 2014). Tiago et al. (2014) further explain that mobile banking is personal and very sensitive, hence the need to show off or impress others is overshadowed by the need to keep transaction confidential and financial data secure. In contrast, Sonja and Rita (2008) investigated that family and mass media are significant factors that influence subjective norm. Thus, the following hypothesis is postulated:

*H6: There is a statistically significant relationship between subjective norm and customer's intention to adopt internet banking.*

## **2.11 GENDER AND ATTITUDE TOWARDS E-BANKING**

Several studies have examined the effects of customers' demographic characteristics such as gender, race, level of income, age, level of education on their attitude towards electronic banking services and maintained that demographic characteristics influence customers' attitude towards e-banking. In a study which was conducted by Rogers (2010) amongst Ugandan population it has been found that females were likely to adopt new innovations in the banking system than males. Conversely, Ariffa et al. (2012) observed that attitude varied significantly across males and females.



Therefore, hypothesise that:

*H7: Female customers have a more positive attitude towards e-banking than their male counterparts.*

## **2.12 ACCESS TO TECHNOLOGY PRODUCTS AND ATTITUDE TOWARDS E-BANKING**

In addition to demographic variables, Obeka (2012) found that customers who possess and have access to technology products or services such as computer, smart phone and internet have a positive attitude and a higher chance of adopting e-banking than those who do not. This factor has been found to be significant in where majority do not have access to free wifi and do not have necessary resources to transact online. Obeka (2012) went on explain that customers who use, or have a desire to use, technology-based services in future were more technologically ready than customers who did not use, or have a desire to use, technology-based services in future. Based on these findings, the current study aims to investigate the impact of access to technological products on attitude towards e-banking. Therefore, based on the theoretical and empirical support from the review of the literature, the researcher aims to test the following hypotheses:

*H8: Access to technological products (smartphone, computer, internet and prior exposure to e-banking) has an impact on customers' attitude towards Internet banking.*

To test this hypothesis, sub-hypotheses were developed which are stated below:

*H8a: Customers who own a smartphone have more positive attitude towards e-banking.*

*H8b: Customers who have access to a computer have more positive attitude towards e-banking.*

*H8c: Customers who have access to internet have more positive attitude towards e-banking.*



*H8d: Customers who have experience in e-banking have more positive attitude towards e-banking.*

## **2.13 CONCLUSION**

In this chapter, an existing literature on acceptance of technology was critically reviewed. Literature review aimed to unveil what is known about the research study, key research figures and methodologies which were used in order to address their limitations. Recommendations from previous studies were also considered. The contents of this chapter also play a crucial role in chapter five of the thesis whereby the researcher compares the findings of the current study to the findings which were conducted in similar contexts. Additional factors which affect intention to adopt e-banking that did not form part of the TAM theory were also discussed.



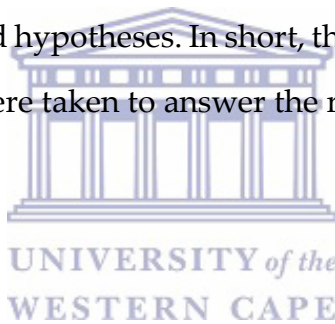
# Chapter Three

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## RESEARCH METHODOLOGY

### 3.1 INTRODUCTION

At the heart of the research study is the process followed to conduct research. This chapter entails a description of the research design, population the sampling method that was used, data gathering procedure, measuring instrument, psychological properties of the measuring technique which was used to gather data, data analysis techniques and ethical principles. The research methodology and design were informed by the research question, research objectives and hypotheses. In short, the research methodology outlines the systematic processes that were taken to answer the research question objectively.



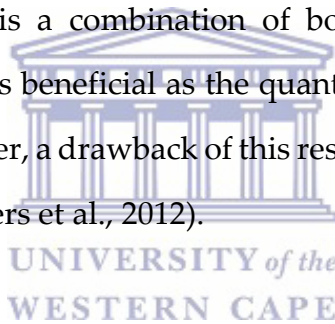
### 3.2 RESEARCH DESIGN

There are three types of research designs, namely; qualitative, quantitative and multi-method research design (Saunders, Lewis & Thornhill, 2012). Qualitative research design usually provides an in-depth description and the research findings are based on the inductive reasoning of the researcher. The sample size is most likely to be small and is not representative of the population. This research design is quite flexible and it generates non-numerical data (Saunders et al., 2012). Qualitative research design is suitable to measure experiences, opinions and feelings of research participants. The qualitative research design is associated with an interpretative philosophy. Interpretivism relies on how researchers interpret the information acquired through the research study. In qualitative research, theory emerges as the study continues or as a product of the study and data is analysed by developing through developing themes.

Common qualitative data collection methods includes in-depth interviews, telephonic interviews and focus groups.

In contrast to qualitative research design, the quantitative research design is centered on generating numerical data and determining relationships between variables. Statistical techniques are used to analyse data and it is important that samples are representative of the population. In quantitative research, the researcher is neutral. Additionally, quantitative research design is associated with a deductive approach thus, research aims to test existing theories (Saunders et al., 2012).

The mixed method approach is a combination of both quantitative and qualitative research designs. This method is beneficial as the quantitative and qualitative approach complement each other. However, a drawback of this research approach is the integration of the research findings (Saunders et al., 2012).



Due to the nature of the current research study which intends to achieve the set objectives, a field study was conducted using a quantitative design. A quantitative research approach was selected because data collection and data analysis is relatively quick. A quantitative research design enabled the researcher to collect as much information as possible so that the research findings can be generalised on the population (Paul, 2010).

### **3. 3 SAMPLING AND RESEARCH PARTICIPANTS**

#### **3.3.1 POPULATION**

The specific criteria used for selecting the participants can only be done by identifying a population to a study, it is therefore important that the researcher identifies the

population used to conduct the study (Cargan, 2007). As cited in Punch (1998) population is defined as the total target group which would, in the ideal world, be the subject of the research and about which one is trying to say something. Additionally, Sekaran (2001) supports that the concept of population refers to the entire group of people, events or things of interest that the researcher wishes to investigate. In the case of the current study a population comprised of an approximately one thousand registered customers who have their own bank accounts.

### 3.3.2 SAMPLE

The criteria of choosing participants from the population is of utmost importance due to the fact that in most cases it is not possible to collect data from the whole research population because the population maybe too big, time consuming, expensive, and not practical to collect data from all the members of the population. As a result the researcher would have to be satisfied with collecting data from a limited number of people, who would constitute a research sample. A sample is a specially selected subset of a population which is studied in order to make inferences about the population from which the sample is drawn (Saunders et al., 2012).

In order to achieve a representative sample in practice; a probability sampling method was used. A probability sample is a sample in which each member of the population has a known probability of being selected (Saunders et al., 2012). A simple random sampling technique was employed; this typically means that each registered customer had a known chance of being chosen as participant in the study. Sekaran (2001) postulates probability sampling as comprising of the unrestricted random sampling and restricted probability sampling. However, the current study followed an unrestricted random sampling of probability sampling. This provided every banked customer equal chance of being drawn as a participant.

Simple random sampling has advantages and the disadvantages associated with it. Bias was minimized and manageable with random sampling, as each of the other banked customers had an equal chance of being randomly selected to take part in the study. In addition, with random sampling procedure the research findings are more generalizable which simply implies that the research findings can be generalised across the entire population. (Sekaran, 2001). On the other side of the coin, the process of randomly selecting participants' becomes a huge disadvantage because; the sampling process required the current and up to date list of registered customers which complicated the administration process of the study. However, for the purpose of realising the objectives of this study the probability sampling design of simple random sampling was utilised.

### **3.4 DATA COLLECTION PROCEDURE**

Data was gathered from individuals. Web based surveys were emailed to company ABC customers. In order to accommodate customers who were not techno-savvy some pencil and paper questionnaires were administered by the researcher from company ABC store. In order to avoid issues of duplication of results and response bias, each participant was granted only one chance to complete the questionnaire. Participants were asked to rate their response to a statement on a five point Likert scale which ranges from strongly disagree, disagree, neutral, agree and strongly agree. The aim of the study is to explain and predict factors which influence attitude towards e-banking and behavioural intention to use e-banking among company ABC customers. The number of participant who participated in the present research study is 207. This sample size is in line with the time and financial limitations of the research as well as sample sizes used in previous related studies conducted by Madhuku amongst in Gauteng province in 2014. Keith (1998) clarifies that, if the results from the sample are going to be generalizable to the whole survey population, then it is important that the sample is typical or representative

of the population in terms of the population's characteristics. Only consumers who are registered with company ABC customers were considered in present study.

### 3.5 MEASURING INSTRUMENT

The questionnaire contained pre-formulated set of questions to which participants were required to record their responses, within rather closely defined alternatives. Basically, participants were required to complete a set of structured questions within limited choices. The questionnaire was divided into two main sections. The first section of the questionnaire started with a screening question which was necessary to ensure that only respondents with bank accounts participated in the research study. This section also included biographical items gathering information such as race, gender, age level of income, level of education and type of bank used. These items were measured using nominal and ordinal scales.


The second section comprised of multiple items adapted from two reliable and valid questionnaires which are described in detail below. The survey which was administered included items which measure the following: perceived ease of use, perceived usefulness, subjective norm, attitude, computer confidence, and intention to start to use or continue using e-banking. The questionnaire made use of rating scale which simplified and quantified the responses. A rating scale was more useful since it enabled the researcher to evaluate responses on a continuum and this is also known as Likert-type scales (Foxcroft & Roodt, 2009). The informants' responses were scored using a five rating scale. Following the Likert Scale format, the respondents were required to indicate the extent to which they agreed or disagreed to a variety of statements by placing a tick next to the appropriate scale/option given. For example, from each statement the respondent had a choice to select one option of the following scales: strongly agree=5; agree = 4; neutral=3, disagree=2; and strongly disagree=1.

### 3.5.1 E-banking Attitude Questionnaire

The E-banking attitude questionnaire consists of six scales. The six scales are: perceived usefulness, subjective norm, trust, attitude and intention to adopt internet banking. Except the intention to adopt internet banking which was developed by Al-Somalia et al. (2009, p. 135), perceived usefulness, subjective norm, trust and attitude scales were developed by Nor and Pearson (2008, p. 68-70). The questionnaire was administered among the South Africans in Gauteng and it was proven to be a reliable and valid tool. The factor loading of the scale items ranges from between .822 and .982. These values indicate that the item being assessed converge into a single construct and that the items are statistically significant. Further psychometric properties of the questionnaire are presented on the table 3.1 below:

Table 3.1

*Psychometric properties of an E-Banking questionnaire.*



<b>Construct</b>	<b>Number of items</b>	<b>Cronbach's Alpha</b>
Perceived ease of use	4	.953
Perceived usefulness	5	.951
Trust of the internet banking system	4	.935
Subjective norm	4	.932
Attitude	5	.951
Behavioural intention	2	.959

(Madhuku, 2014)

As presented on table 3.1, four items measure perceived ease of use, perceived usefulness scale consists of five items, four items measure trust in the internet banking system, subjective norm is measured by four items, attitude is measured by five items, whereas

two items measure intentions to start or continue using e-banking. In total, they are twenty four items in an e-banking attitude scale.

### 3.5.2 Computer Confidence Subscale

To measure the impact of computer confidence on attitude towards e-banking, a standardized computer attitude scale was adapted from a computer attitude scale which was developed by Loyd and Loyd (1985). The original survey comprises 40 Likert-scale items in four subscales, namely, computer liking, computer anxiety, computer confidence, and computer usefulness. Each subscale has ten items. Only computer confidence subscale was selected by the researcher, which is relevant to the current study. The original survey with four-point items was modified to have five points so fit five point scale Likert, which was used to measure attitude towards e-banking. The respondents rated their attitude towards the computer on the following scale: strongly agree=5; agree =4; neutral=3, disagree=2; and strongly disagree=1. Among the 10 extracted items, 5 items are negatively worded.

Table 3.2

*Computer Confidence*

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#### **Computer Confidence Scale**

---

- I'm no good with computers
  - Generally, I would feel OK about trying a new problem on a computer.
  - I think using a computer would be very hard for me
  - I don't think I would do advanced computer work
  - I am sure I could do work with a computer.
  - I am not the type to do well with the computers
  - I am sure I could learn a computer language
  - I could get good grades in computer courses
  - I do not think I could handle a compute course
  - I have a lot of confidence when it comes to working with computers
-



## 3.6 DATA ANALYSIS TECHNIQUES

### 3.6.1 Data quality check

Before data analysis process, data quality check was conducted to get rid of errors which might have a negative impact data analysis negatively. Outliers and foreign numbers were identified through the frequency analysis technique in which the maximum and minimum values for each of the variables were specified in SPSS. Missing values were addressed using SPSS. Missing value problem is associated with self-reporting when participants do not respond to all the questions. Missing values were addressed using SPSS Pairwise deletion method. Pairwise deletion method, discards cases on an analysis by analysis basis, in contrast to Listwise deletion method which has a negative impact on the sample size (Pallant, 2016).



### 3.6.2 Descriptive Statistics

Descriptive statistics is an important aspect in any research study. The descriptive statistics were used to describe the characteristics of the sample for the current study, as well as to check any violation of the assumptions underlying the statistical techniques that were used to address the research questions. Furthermore, demographic variables played a key role in addressing specific research questions which were under investigation such as, population distribution by bank, distribution of population by experience in using cell phone and internet banking, population distribution by smartphone ownership, distribution of population by access to a computer, distribution of population by access to internet and gender (Pallant, 2016).

### **3.6.3 Item Analysis**

In the present study SPSS was used to conduct the item-analysis procedure. The process of analyzing items involved identifying and eliminating items which have a low relationship with other items in a subscale. Item analysis was conducted to determine if the scores of the scales were positively correlated and if the correlation were moderately high. For a scale to be reliable the Cronbach Alpha was supposed to meet the minimum acceptable value of .70 (Sekaran, 2001).

### **3.6.4 Factor Analysis**

Factor analysis was conducted using SPSS. To demonstrate the uni-dimensionality of each of the scales, principal axis factoring analyses with direct oblimin rotation and oblique rotation were performed. Poor items were deleted based on the following criteria; the KMO value was supposed to meet the minimum acceptable value: those between .70-.80 were considered as good while those above .90 were superb. In addition the correlations matrix cut off point was .30, all item below .30 were deleted. Furthermore the eigenvalue-greater-than-unity rule of thumb was also used to find out the number of factors to extract. Kaiser's criterion which states that the number of factors to be extracted should not be more than the number of eigenvalues greater than 1.00 was considered (Pallant, 2016).

### **3.6.5 Pearson- Correlations Analysis**

Pearson correlation is usually used when a researcher want to measure the strength and the direction of the relationship between two continuous variables (Sekaran, 2001). In the current research study the researcher utilised Pearson correlation to test for the relationship between the variables under investigation (Punch, 1998).

### **3.6.6 Multiple Regression Analysis**

Multiple regression is a sophisticated extension of correlation and is usually used to obtain the predictive ability of a set of independent variables on one continuous dependent measure (Pallant, 2016). The use of multiple regression was made in order to enable the researcher to ascertain how accurately the independent variables (computer attitude, trust, perceived ease of use, perceived usefulness, subjective norm, gender) predict the dependent variable attitude (attitude). Multiple regression was also used to find the best set of variables to predict intention to start or continue using e-banking.

### **3.6.7 T-Test**

T-tests are used to compare two mean scores on some continuous of the same participants or mean differences of two different groups (Pallant, 2016). In the current research study, T-Test was used to test mean differences between groups such as male and females, mean differences between customers who have access to internet and those who do not, mean differences between customers who have access to a computer and those who do not, mean differences between customers who own a smartphone and those who do not, differences between customer who had exposure to e-banking before transacting with company ABC and those who starting using e-banking when making payments to company ABC. The researcher was interested in comparing scores of the aforementioned groups.

### **3.6.8 Structural equation modelling SEM**

Structural equation modelling (SEM) was also used to test the relationships between independent and dependent variables. The aim of structural equation modelling is to determine how well the model fits the data of the underlying theory. Model fit refers to the extent to which a hypothesised model is consistent with the data. SEM is a statistical technique which is used to analyse large samples. It helps to explain the patterns of

covariances found amongst the observed variables in terms of the relationships hypothesised by measurement and structural models (Diamantopoulos & Siguaaw, 2000). SEM model includes combination of the measurement model which specifies the number of factors, how the various indicators are related to the latent variable and the structural model, which specifies the relationships between the latent variables. There is a debate of fit index cut-offs and this situation is further complicated by the fact that fit indices are often differentially affected by others factors such as sample size, model complexity, estimation method, normality of data and type of misspecification. The LISREL programme version 8.80 (Jöreskog & Sörbom, 2006), was used to determine model fit. In order to assess the model fit, a variety of fit indices were used to guide the researcher in the process of model fit.



#### **3.6.8.1 Chi-square statistic**

The chi-square statistic was used to determine the congruence or incongruence between the observed and reproduced sample covariance matrices. It provides a test of perfect fit in which the null hypothesis is that the model fits the population data perfectly. The normal theory chi-square statistic is very sensitive to sample size. Utilising sample sizes might result in model rejections and chi-square lacks the power to discriminate between a good fit and a poor fit in the case of small sample sizes.

#### **3.6.8.2 Root mean square error of approximation (RMSEA)**

Root mean square error of approximation (RMSEA) was used to measure closeness of fit. When measuring the RMSEA, values less than .05 are suggestive of good fit, those between .05 and under .08 of reasonable fit, values between .08 and .10 indicate mediocre fit and those above .10 indicate poor fit (Diamantopoulos & Siguaaw, 2000).

### **3.6.8.3 Root mean square residual (RMR) and standardised root mean square residual (SRMR)**

Root mean square residual (RMR) is a summary measure of fitted residuals and presents the average value of the difference between the sample covariance (variance) and a fitted (model-implied) covariance (variance). A summary measure of standardised residuals is the standard RMR; values below .05 indicate acceptable fit (Diamantopoulos & Siguaw, 2000).

### **3.6.8.4 The goodness-of-fit (GFI) and the adjusted goodness-of-fit index (AGFI)**

The goodness-of-fit statistic indicates relevant amount of variances and covariances accounted for by the model. Therefore, GFI shows how closely the model comes to perfectly reproduce the observed covariance matrix. The adjusted goodness-of-fit index (AGFI) is the GFI adjusted for the degrees of freedom in the model, while the parsimony goodness-of-fit index (PGFI) makes a different type of adjustment to take model complexity into account. The values of the GFI and AGFI should range between 0 and 1 and values greater than .90 are usually interpreted as reflecting acceptable fit. Acceptable values for the PGFI are much lower, within the .50 region (Mulaik, James, Van Alstine, Bennet, & Stilwell, 1989). Generally, the goodness-of-fit index (GFI) is recommended as the most reliable measure of absolute fit (Diamantopoulos & Siguaw, 2000).

### **3.6.8.5 Relative fit indices**

Relative fit indices show how much better the model fits compared to a baseline model, usually the independence model. Except the non-normed fit index (NNFI) all the indices in this group have a range between 0 and 1, with values closer to 1 representing good fit. The NNFI can take a value greater than 1 and lower values of the PNFI are expected in relation to the non-parsimonious NFI (Diamantopoulos & Siguaw, 2000).

### **3.6.8.6 The normed fit index**

The normed fit index (NFI) evaluates the estimated model by comparing the chi-square value of the model to the chi-square value of the independence model (Bentler & Bonett, 1980). It also indicates the percentage improvement in fit over the baseline independence model. The values of the NFI lie between 0 and 1.

### **3.6.8.7 The non-normed fit index (NNFI)**

The non-normed fit index adjusts the NFI by incorporating the degrees of freedom in the model (Tabachnick & Fidell, 2001). This reduces the NFI's problem of underestimating the fit in extremely good fitting models. Usually NNFI values greater than .95 are interpreted as reflecting acceptable fit.

### **3.6.8.8 The comparative fit index (CFI)**

The comparative fit index measures the fit relative to other models. The comparative fit index values greater than .90 indicate good fit (Diamantopoulos & Siguaw, 2000; Tabachnick & Fidell, 2001).

### **3.6.8.9 The expected cross-validation index (ECVI)**

The expected cross-validation index (ECVI) measure the difference between the reproduced sample covariance matrixes derived from fitting the model on the sample at hand and the expected covariance matrix that would be obtained in an independent sample of the same size from the same population (Diamantopoulos & Siguaw, 2000).

### **3.6.8.10 Interpreting the structural model parameter estimate**

The structural model was evaluated to determine whether the theoretical relationships specified at the conceptualisation stage are substantiated by the data. They are four

important issues in the evaluation of the structural model (Diamantopoulos & Siguaaw (2000). Firstly, assessing the signs of the parameters expressive the paths between the latent variables to determine the degree of consistence with the nature of the causal effect hypothesised to exist between the latent variables. Secondly, it is important to establish if the parameter estimates are significant ( $p < 0.05$ ) as indicated by t-values greater than  $| 1.96 |$ . Thirdly, it is important to assess the magnitudes of the estimated (standardised) parameters indicating the strength of the hypothesised relationships. Lastly, it is important to evaluate the squared multiple correlations ( $R^2$ ), which indicate the amount of variance in each endogenous latent variable that is explained by the latent variables linked to it in the hypothesised structural model. The process of evaluating the structural model entails an in-depth analysis of the freed elements of the gamma and beta matrices.

### 3.7 STRENGTHS OF THE STUDY'S METHODOLOGY

A combination of both quantitative internet-based and paper and pencil have a number of benefits over the qualitative study. Use of both internet-based and pencil and paper survey enabled customers who are both techno-savvy and non-techno-savvy to participate. Additionally, the online survey approach has been reported to be cheap and time saving (Burcu, 2000; Khotari, 2004). E-mail surveys make use of the electronic text communication, which requires fewer resources, and provide faster responses. It can enable the researcher to enlarge the size of the targeted sample if necessary and research findings can be used to generalise to the entire population (Burcu, 2000). E-mail survey enabled the researcher to reached participants who are spread across South Africa within a limited period of time. The other advantage with regard to time is that the participants had a choice of completing the online survey at their convenient time and place using their handheld device.



Moreover, random sampling enabled the researcher to conduct data from a diverse sample size where every participant has an equal chance to take part in the study. In addition, every participant had a chance to be randomly selected to take part in the study. The measurement of concepts made the data analysis less time consuming than the qualitative techniques. The SPSS computer software version 23 was used to analyse the research findings in a fast and quick way.

Again, the research results are independent of the researcher. The quantitative research method, which was used to conduct the study, minimized the possibility of the researcher influencing the customer's attitude towards e-banking.

### **3.8 ETHICAL CONSIDERATIONS**

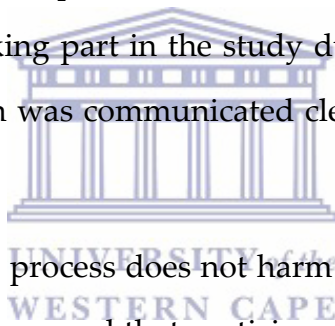
Research ethics guide the research process and the conduct of researchers, aiming to prevent the abuse of participants (Babbie, 2011). The researcher ensured that the research process was ethically conducted, below are the ethical guidelines which guided the research process.

The researcher respected the rights and dignity of the participants who participated in this study by showing respect through understanding and respecting their opinions and culture. Moreover, participants had the freedom to decide whether to participate in the research study or not and they were informed about the purpose, risk and benefits of participating in the research study. They were also informed that they were not going to be paid for participating but they would enter a luck draw to win an incentive of airtime. By participating, participants would stand a chance to win or not to win an incentive; this was clearly communicated to the participants before participating. Furthermore, the researcher ensured that their values did not influence the findings. Participants' responses and their opinions were respected in a non-judgmental approach. Permission



to conduct study was obtained from company ABC and the University of the Western Cape, and the research was conducted in accordance with the research protocol approved by the University of the Western Cape.

The ethical principle of voluntary participation and informed consent ensured that participants were informed about the purpose, the procedure, and the effects of research, risk and benefits of participation. The researcher explained the purpose of the study, benefits, risk and each participant was asked to sign an informed consent form which was an indication that they understood what has been explained to them. In ensuring the ethical research standards, the access to customers email addresses was obtained from company ABC management. Participants volunteered completely in the research study. The right to withdraw from taking part in the study during the process without being required to offer an explanation was communicated clearly to the participants (Babbie, 2011).



It is important that the research process does not harm the participants intentionally or unintentionally. The researcher ensured that participants were not harmed in any form. The current research study observed the ethical principal of beneficence which entails making a positive contribution to the wellbeing of participants and the society as a whole. The research has managerial and marketing implications to company ABC which have the potential to increase usage of e-banking the cheapest way and the most convenient way of making payments. This will benefit both the company and participants (Sekaran, 2001).

The confidentiality of the participants and data provided were maintained in order to safeguard the interest of the research participants. Web based survey which was used to gather and analyse data automatically altered the names of the participants to ensure anonymity. If published, participants and the name of the organization will be altered to

maintain anonymity. Confidentiality can be defined as the protection of participants by keep data from unauthorized persons and not releasing information in a way that may permit linking specific individuals or organizations to specific responses (Swartz, 2011). The researcher ensured that the supervisor and company ABC management only had access to the research findings. Collected data was used only for the stated purpose which is academic related and for the development of company ABC's service (Swartz, 2011). Lastly, the researcher is aware that data falsification is an offense. The researcher reported on primary data obtained through research, thus eliminating data falsification. The technical shortcomings and methodological constrains were communicated for future research.

### 3.9 CONCLUSION

The research methodology, which was used to gather and analyse data, was presented in chapter three. The participant selection criteria, data gathering procedure, as well as the justification of the research methodology were discussed. Different ways of analyzing data which are data quality check, T-Test, Pearson correlation, Multiple regression analysis were also discussed in detailed. The chapter concluded by an explanation of ethical principles which guided the research process.

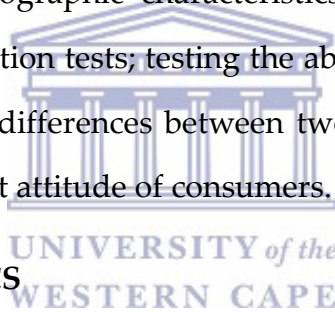
# Chapter Four

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## Results

### 4.1 INTRODUCTION

This chapter is a presentation of the research findings of the present study. Descriptive statistics and statistical analysis techniques which were discussed in the preceding chapter were used to analyse raw data. The hypotheses which were formulated after a critical review of the literature were tested using SPSS version 23. The chapter commences with a discussion of the demographic characteristics of the sample; item analysis; dimensionality analysis; correlation tests; testing the ability of independent variables to predict attitude of consumers, differences between two groups and testing the ability independent variables to predict attitude of consumers.



### 4.2 DESCRIPTIVE STATISTICS

The 4.1 presents a description of the characteristics of the sample for the current study. Characteristics of a sample are vital because they are used to check any violation of the assumptions underlying the statistical techniques that are used to address the research questions (Pallant, 2016). Additionally, demographic variables were also used to addresses specific research questions which were under investigation and to describe the characteristics of the sample. As summarized in table 4.1 a total of 107 respondents (51.7% of the total sample) were male, while 100 (48.3%) were female. In terms of age respondent between the age of 26-30 (27.5%) were over-represented whereas respondents below 20 (1.4%) were underrepresented.

Significant to this study is the over-representation of customers who bank with Internet and Mobile Banking and other banks. This is mainly because of that the majority of

foreign nationals do not meet the criteria to open a primary bank account in South Africa; therefore they turn to other banks to open secondary accounts such as IMB, Mukuru.com, and Zunde etc. Moreover, 73.4% of participant indicated that they own a smartphone, whereas 26.6 do not own a smartphone. With regard to access to a computer among participants, 56% of the respondents stated that they have access to a computer, while 44 respondents do not have access to a computer. It was noted that 68.6% participants have access to the internet, whereas 22.4% do not have access to internet. Customers who do not use electronic banking outnumbered customers who use internet banking services by 20.8%. The demographic questions were compulsory questions, so they were no missing data on the demographic statistics.

Table 4.1

*Descriptive Statistics*



Variable	Frequency	Valid Percentage
<b>Distribution of Population Gender</b>		
Male	107	51,7%
Female	100	48,3%
<b>Distribution of Population By Type of Bank</b>		
FNB	44	21,3%
ABSA	25	12,1%
NEDBANK	24	11,6%
STANDARD BANK	28	13,5%
CAPITEC	21	10,1%
BIDVEST	5	2,4%
IMB	18	8,7%
Other	42	20,3%
Total	207	100%

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**Population Distribution by Smartphone Ownership**

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Yes	152	73,4%
No	55	26,6%
Total	207	100%

**Population Distribution by Access to a Computer**

Yes	116	56%
No	91	44%
Total	207	100%

**Population Distribution by Access to Internet**

No	65	31,4%
Yes	142	68,6%
Total	207	100%

**Population Distribution by Experience with E-banking**

Adopters	82	39,6%
Non Adopters	125	60,4%
Total	207	100%

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### 4.3 ITEM ANALYSIS

Item analysis was conducted using SPSS Reliability procedure. The process of analysing items involved identifying and eliminating items which have a low relationship with other items in a subscale. The process of analysing items was also conducted to determine if negative items were reversed and to determine if items are highly correlated to avoid the problem of multi-Collinearity and since some of the statistical analysis techniques do not require highly correlated items. According to DeVellis (2003, as cited in Pallant, 2016), the ideal Cronbach's alpha coefficient of a scale should be above .70

The attitude towards internet and cell phone banking Questionnaire is a self-report measuring instrument which consists of 24 items measuring 6 scales (perceived ease of

use, perceived usefulness, trust in the internet banking, intention to start or continue using e-banking, subjective norm and attitude towards e-banking). Additionally, computer confidence scale, which contains 10 items, was adapted from computer attitude questionnaire to measure the impact of computer confidence on attitude towards e-banking. Therefore, 34 items were utilised to measure attitude towards e-banking. This section focuses on item analysis for each of the 7 scales separately.

#### **4.3.1 Attitude Scale Item Analysis**

The Cronbach's alpha coefficient was calculated to assess the reliability of the attitude subscale and was found to be .855 an acceptable figure which is above the benchmark of .70 suggested by (Pallant, 2016). Hence, one can conclude that the intellectual simulation scale is reliable. The Inter-Item Correlation Matrix displays the correlation of each item with another item. Items closer to 1 are regarded as large whereas items with correlation value closer to 0 are considered as small (small  $r = 0.10$  to  $0.29$ , medium  $r = .30$  to  $.49$ , large  $r = .50$  to  $1$ ). The corrected Item total correlation values were all above .30 meaning that all items are good. None of the Cronbach Alpha if item deleted values would increase the reliability of the attitude subscale. Therefore all the items were maintained.

Table 4.2

*Item Analysis Output for Attitude Scale*

Reliability Statistics		
Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.855	.855	5

Item Statistics			
	Mean	Std. Deviation	N
attitude1	2.36	1.074	196
attitude2	2.29	1.073	196
attitude3	2.35	1.129	196
attitude4	2.45	1.092	196
attitude5	2.38	1.073	196

Inter-Item Correlation Matrix					
	attitude1	attitude2	attitude3	attitude4	attitude5
attitude1	1.000	.639	.530	.491	.473
attitude2	.639	1.000	.558	.622	.567
attitude3	.530	.558	1.000	.464	.447
attitude4	.491	.622	.464	1.000	.626
attitude5	.473	.567	.447	.626	1.000

Item-Total Statistics					
	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
attitude1	9.48	12.579	.656	.464	.828
attitude2	9.55	11.993	.752	.575	.803
attitude3	9.48	12.590	.607	.382	.841
attitude4	9.38	12.319	.681	.505	.821
attitude5	9.45	12.639	.648	.457	.830

### 4.3.2 Trust Scale Item Analysis

A Cronbach's alpha coefficient of .91 was obtained for the trust subscale. The Inter-Item Correlation Matrix values ranged from .639 to .739. This indicates that all four attitude items correlate well with each other. Item total statistics indicated that the corrected Item total correlation values were all above .30 meaning that the all items are good and that none of the Cronbach Alpha if item deleted values would result in a substantial increase in the reliability of the attitude subscale.

Table 4.3

#### *Item Analysis Output for the Trust Scale*

Reliability Statistics		
Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.908	.908	4

Item Statistics			
	Mean	Std. Deviation	N
trust 1	2.75	1.234	202
trust2	2.97	1.265	202
trust3	2.74	1.325	202
trust4	2.92	1.332	202

Inter-Item Correlation Matrix				
	trust1	trust2	trust3	trust4
trust1	1.000	.706	.674	.720
trust2	.706	1.000	.639	.739
trust3	.674	.639	1.000	.791
trust4	.720	.739	.791	1.000



	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item- Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
trust1	8.63	12.563	.775	.604	.887
trust2	8.41	12.421	.767	.610	.890
trust3	8.64	11.963	.779	.649	.886
trust4	8.46	11.433	.850	.733	.860

### 4.3.3 Perceived Ease of Use Scale Item Analysis

A reliability coefficient of .872 was obtained for the perceived ease of use subscale, which is acceptable. The Inter-Item Correlation Matrix values for the perceived ease of use indicates that perceived ease of use items correlates well with each other (see Table 4.4). The Inter-Item Correlation Matrix values range from .492 to .707. Item total statistics indicated that the corrected Item total correlation values were all above .30 meaning that all items are good and that none of the Cronbach Alpha if item deleted values would result in a substantial increase in the reliability of the attitude scale. Therefore, all the items will be maintained.

Table 4.4

*Item Analysis Output for the Perceived Ease of Use Scale*

Reliability Statistics		
Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.872	.872	4

Item Statistics			
	Mean	Std. Deviation	N
perceivedease1	2.47	1.222	202
perceivedease2	2.59	1.243	202
perceivedease3	2.60	1.223	202
perceivedease4	2.55	1.327	202

Inter-Item Correlation Matrix				
	perceivedeas			
	perceivedease1	perceivedease2	e3	perceivedease4
perceivedease1	1.000	.492	.605	.694
perceivedease2	.492	1.000	.665	.621
perceivedease3	.605	.665	1.000	.707
perceivedease4	.694	.621	.707	1.000

Item-Total Statistics					
	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
perceivedease1	7.74	11.167	.680	.508	.855
perceivedease2	7.61	11.104	.672	.488	.858
perceivedease3	7.61	10.598	.769	.599	.820
perceivedease4	7.66	9.858	.792	.635	.810

#### 4.3.4 Perceived Usefulness Scale Item Analysis

Table 4.5 indicates that the reliability coefficient of perceived usefulness subscale is .829, which is satisfactory. The inter-item correlation values range from .399 to .58; this indicates a large relationship among perceived usefulness items. The corrected item-total values for all four items correlated above .30, the minimum acceptable value. None of the items if deleted would result in an increase of reliability of the subscale; therefore, all items were maintained.

Table 4.5

*Item Analysis Output for the Perceived Usefulness Scale***Reliability Statistics**

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.829	.831	5

**Item Statistics**

	Mean	Std. Deviation	N
perceivedusefulnes1	2.24	1.146	199
perceivedusefulnes2	2.26	1.044	199
perceivedusefulnes3	2.16	.992	199
perceivedusefulnes4	2.23	1.070	199
perceivedusefulnes5	2.25	1.032	199

**Inter-Item Correlation Matrix**

	perceivedusefulnes1	perceiveduseful2	perceiveduseful3	perceiveduseful4	perveduseful5
perceivedusefulnes1	1.000	.498	.429	.442	.399
perceivedusefulnes2	.498	1.000	.589	.580	.532
perceivedusefulnes3	.429	.589	1.000	.565	.410
perceivedusefulnes4	.442	.580	.565	1.000	.516
perceivedusefulnes5	.399	.532	.410	.516	1.000

**Item-Total Statistics**

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
perceivedusefulnes1	8.89	11.129	.549	.306	.820
perceivedusefulnes2	8.87	10.690	.711	.511	.771
perceivedusefulnes3	8.96	11.418	.631	.432	.795
perceivedusefulnes4	8.90	10.768	.672	.465	.782
perceivedusefulnes5	8.88	11.501	.581	.359	.808

### 4.3.5 Subjective Norm Scale Item Analysis

Table 4.6 depicts that the reliability coefficient of the subjective norm subscale is .78, which is an acceptable value. The mean inter-item correlation values ranged from .36 to .58, which is above the minimum acceptable figure of .30. The corrected item-total correlation indicated that the items all correlated satisfactorily above .30, whereas none of the items if deleted would result in a substantial increase in the reliability of the subjective norm scale. Therefore, all items were maintained.

Table 4.6

*Item analysis output for the Subjective Norm Scale*

Reliability Statistics			
Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items	
.780	.784	4	

Item Statistics			
	Mean	Std. Deviation	N
subjectivenorm1	2.33	.998	203
subjectivenorm2	2.34	1.023	203
subjectivenorm3	2.26	.947	203
subjectivenorm4	2.24	.875	203

Inter-Item Correlation Matrix				
	subjectivenorm1	subjectivenorm2	subjectivenorm3	subjectivenorm4
subjectivenorm1	1.000	.363	.488	.470
subjectivenorm2	.363	1.000	.531	.418
subjectivenorm3	.488	.531	1.000	.582
subjectivenorm4	.470	.418	.582	1.000

Item-Total Statistics					
	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation n	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
subjectivenorm1	6.84	5.454	.533	.298	.755
subjectivenorm2	6.83	5.368	.532	.308	.757
subjectivenorm3	6.91	5.121	.681	.472	.677
subjectivenorm4	6.94	5.634	.610	.394	.717

#### 4.3.6 Intention to Start or Continue Using E-banking Item Analysis

The intention to adopt electronic banking scale scored internal consistency coefficient value of .728. The mean inter-item correlation is .57, which suggests a moderately strong relationship between items (DeVellis, 2003, as cited in Pallant, 2016). The item-total statistics indicated that the corrected item-total correlation values for all items correlated above .30.

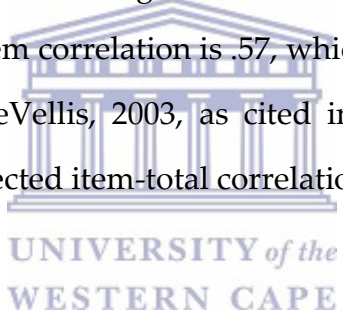


Table 4.7

*Item Analysis Output for the Intention to Start or Continue Using E-banking Scale*

Reliability Statistics		
Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.728	.732	2

Item Statistics			
	Mean	Std. Deviation	N
intention2	2.01	.917	203
intention1	2.03	1.045	203

**Inter-Item Correlation Matrix**

	intention2	intention1
intention2	1.000	.578
intention1	.578	1.000

**Item-Total Statistics**

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
intention2	2.03	1.093	.578	.334	.
intention1	2.01	.841	.578	.334	.

### 4.3.7 Item Analysis for Computer Confidence Scale

The Computer Confidence scale scored a high-reliability value figure of .91, which is superb. The mean inter-item correlation values is .55, ranging from .28 to .66, indicating a strong correlation among items. All items were maintained since the corrected item-total correlation indicated that all items correlated above .30 and since none of the items if deleted would result in an increase of the reliability coefficient of the computer confidence scale.

Table 4.8

*Item analysis output for the Computer Confidence Scale*

**Reliability Statistics**

Cronbach's Alpha Based on Standardized Items	N of Items
.919	10

**Item Statistics**

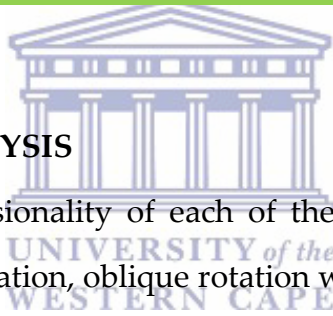
	Mean	Std. Deviation	N
Computer Confidence 1reversed	2.97	1.379	197
Computer Confidence 3reversed	2.73	1.406	197
Computer Confidence 6reversed	2.62	1.422	197
Computer Confidence 7reversed	2.66	1.495	197
Computer Confidence 9reversed	2.79	1.530	197
Computer Confidence 10	2.53	1.206	197
Computer Confidence 8	2.73	1.419	197
Computer Confidence 5	2.60	1.376	197
Computer Confidence 2	2.82	1.269	197
Computer Confidence 4	2.70	1.355	197

**Inter-Item Correlation Matrix**

	cc1	cc3	cc6r	cc7r	cc9r	cc10	cc8	cc5	cc2	cc4
cc1reversed	1.000	.412	.544	.689	.592	.554	.617	.591	.548	.591
cc3reversed	.412	1.000	.413	.347	.359	.285	.439	.387	.312	.342
cc6reversed	.544	.413	1.000	.577	.521	.355	.511	.552	.494	.536
cc7reversed	.689	.347	.577	1.000	.609	.485	.609	.585	.527	.594
cc9reversed	.592	.359	.521	.609	1.000	.579	.662	.599	.495	.576
cc10	.554	.285	.355	.485	.579	1.000	.633	.626	.451	.562
cc8	.617	.439	.511	.609	.662	.633	1.000	.692	.596	.660
cc5	.591	.387	.552	.585	.599	.626	.692	1.000	.546	.742
cc2	.548	.312	.494	.527	.495	.451	.596	.546	1.000	.558
cc4	.591	.342	.536	.594	.576	.562	.660	.742	.558	1.000

### Item Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item- Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
cc1reversed	24.18	89.885	.753	.597	.907
cc3reversed	24.43	96.634	.466	.259	.924
cc6reversed	24.53	91.679	.653	.473	.913
cc7reversed	24.49	88.578	.735	.589	.908
cc9reversed	24.37	88.204	.729	.555	.909
cc10	24.62	94.664	.655	.517	.913
cc8	24.43	88.236	.797	.659	.905
cc5	24.55	89.310	.780	.667	.906
cc2	24.34	93.797	.655	.450	.913
cc4	24.46	90.219	.755	.627	.907



#### 4.4 DIMENSIONALITY ANALYSIS

To substantiate the uni-dimensionality of each of the scales, principal axis factoring analyses with direct oblimin rotation, oblique rotation were performed. Poor items were deleted based on the following criteria; the KMO value was supposed to meet the minimum acceptable value, those between .70- .80 were considered as good while those above .90 were superb. In addition, the correlations matrix cut-off point was .30. Furthermore, the Eigen value-greater-than-unity rule of thumb was also used to find out the number of factors to extract. Kaiser's criterion which states that the number of factors to be extracted should not be more than the number of eigenvalues greater than 1.00 was also considered.

##### 4.4.1 Dimensionality Analysis for Attitude Scale

Table 4.9 depicts the uni-dimensionality analysis for attitude scale. As stated below the attitude scale achieved a Kaiser-Meyer-Olkin measure of sampling adequacy value of .843 and the Bartlett's Test of Sphericity test statistic value of 404.282 (DF=10, p=0.00),



indicating suitability of the data for factor analysis. The correlation matrix indicates that all correlations were larger than .30, ranging from .46 to .63 and all were significant ( $p < 0.00$ ). Only one factor was extracted, since only one factor obtained an eigenvalue greater than 1 explaining 63.5% of the variance. Therefore, all the items of the attitude scale were included in the dimensionality since they load adequately on the factor.

Table 4.9  
*The Dimensionality Analysis for Attitude Scale*

		Correlation Matrix				
		attitude1	attitude2	attitude3	attitude4	attitude5
Correlation	attitude1	1.000	.639	.530	.491	.473
	attitude2	.639	1.000	.558	.622	.567
	attitude3	.530	.558	1.000	.464	.447
	attitude4	.491	.622	.464	1.000	.626
	attitude5	.473	.567	.447	.626	1.000
Sig. (1-tailed)	attitude1		.000	.000	.000	.000
	attitude2	.000		.000	.000	.000
	attitude3	.000	.000		.000	.000
	attitude4	.000	.000	.000		.000
	attitude5	.000	.000	.000	.000	

a. Determinant = .120

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.843
Bartlett's Test of Sphericity	Approx. Chi-Square	408.282
	Df	10
	Sig.	.000

### Total Variance Explained

Factor	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	3.173	63.455	63.455	2.730	54.600	54.600
2	.644	12.886	76.341			
3	.482	9.639	85.980			
4	.384	7.681	93.662			
5	.317	6.338	100.000			

Extraction Method: Principal Axis Factoring.

### Factor Matrix

	Factor
	1
attitude1	.720
attitude2	.839
attitude3	.662
attitude4	.752
attitude5	.711

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#### 4.4.2 The Uni-dimensionality Analysis of Trust

The trust scale achieved a Kaiser-Meyer-Olkin measure of sampling adequacy value of .82 and the Bartlett's Test of Sphericity test statistic value of 540.395 (DF=6, p=0.00), indicating the suitability of the data for factor analysis. The correlation matrix shows large correlation, since they ranged from .63 to .79 and they were all significant (p < .00). In addition, one factor was extracted, explaining 78.4 % of variance. The factor Matrix of all values was above .80. Therefore, all the items were included in the dimensionality analysis since they load sufficiently on the factor.

Table 4.10

*The Dimensionality Analysis for the Trust Scale*

Correlation Matrix					
		trust1	trust2	trust3	trust4
Correlation	trust1	1.000	.706	.674	.720
	trust2	.706	1.000	.639	.739
	trust3	.674	.639	1.000	.791
	trust4	.720	.739	.791	1.000
Sig. (1-tailed)	trust1		.000	.000	.000
	trust2	.000		.000	.000
	trust3	.000	.000		.000
	trust4	.000	.000	.000	

KMO and Bartlett's Test	
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.	.824
Bartlett's Test of Sphericity	Approx. Chi-Square
	540.395
	Df
	6
	Sig.
	.000

Total Variance Explained						
Factor	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	3.136	78.407	78.407	2.855	71.380	71.380
2	.380	9.496	87.903			
3	.298	7.444	95.347			
4	.186	4.653	100.000			

Factor Matrix	
	Factor
trust1	.820
trust2	.813
trust3	.828
trust4	.914

### 4.4.3 The uni-dimensionality Analysis of Perceived Ease of use

The perceived ease of use subscale achieved a Kaiser-Meyer-Olkin measure of sampling adequacy value of .80 and the Bartlett's Test of Sphericity test statistic value of 411.714 (DF=6, p=0.00). This indicates that data was factor-analyzable. The correlation matrix of all items ranged from .49 to .69 and all correlations were significant at  $p < 0.00$ . The factor matrix showed that all the items loaded on one factor satisfactorily as all factor loadings were larger than .70. One factor with an Eigen value greater than 1 was obtained, which explains 72.4% of the variance. Therefore all items were maintained.

Table 4.11

*The Dimensionality Analysis Output for the Perceived Ease of Use Scale*



		perceivedease1	perceivedease2	perceivedease3	perceivedease4
Correlation	perceivedease1	1.000	.492	.605	.694
	perceivedease2	.492	1.000	.665	.621
	perceivedease3	.605	.665	1.000	.707
	perceivedease4	.694	.621	.707	1.000
Sig. (1-tailed)	perceivedease1		.000	.000	.000
	perceivedease2	.000		.000	.000
	perceivedease3	.000	.000		.000
	perceivedease4	.000	.000	.000	

KMO and Bartlett's Test	
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.	.805
Bartlett's Test of Sphericity	Approx. Chi-Square
	411.714
	Df
	6
	Sig.
	.000

### Total Variance Explained

Factor	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	2.896	72.408	72.408	2.545	63.632	63.632
2	.527	13.180	85.588			
3	.311	7.764	93.352			
4	.266	6.648	100.000			

### Factor Matrix

	Factor
	1
perceivedease1	.736
perceivedease2	.727
perceivedease3	.843
perceivedease4	.875



#### 4.4.4 The uni-dimensionality Analysis of Perceived Usefulness Scale

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The perceived usefulness scale obtained a Kaiser-Meyer-Olkin measure of sampling adequacy value of .84 and the Bartlett's Test of Sphericity test statistic value of 342.721 (DF=10, p=0.00). Therefore there was sufficient evidence that data was factor-analyzable. The correlation matrix of all items ranged from .60 to .80 and all items were correlated at  $p < .00$  significant level. The factor matrix showed that all the items loaded on one factor adequately as all factor loadings were larger than .50. One factor with an Eigen value greater than 1 was obtained, which explains 59.9% of the variance. Therefore all items were maintained.

Table 4.12

*The dimensionality analysis output for the Perceived Usefulness subscale*

		Correlation Matrix				
		perceivedusef ulnes1	perceivedus eful2	perceivedus eful3	perceivedusefu l4	perceivedusef ul5
Correlation	perceivedusefulness1	1.000	.498	.429	.442	.399
	perceiveduseful2	.498	1.000	.589	.580	.532
	perceiveduseful3	.429	.589	1.000	.565	.410
	perceiveduseful4	.442	.580	.565	1.000	.516
	perceiveduseful5	.399	.532	.410	.516	1.000
Sig. (1-tailed)	perceivedusefulness1		.000	.000	.000	.000
	perceiveduseful2	.000		.000	.000	.000
	perceiveduseful3	.000	.000		.000	.000
	perceiveduseful4	.000	.000	.000		.000
	perceiveduseful5	.000	.000	.000	.000	

a. Determinant = .173



**KMO and Bartlett's Test**

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.844
Bartlett's Test of Sphericity	Approx. Chi-Square	342.721
	Df	10
	Sig.	.000

**Total Variance Explained**

Factor	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	2.994	59.877	59.877	2.514	50.270	50.270
2	.615	12.302	72.179			
3	.593	11.862	84.042			
4	.422	8.449	92.491			
5	.375	7.509	100.000			

Extraction Method: Principal Axis Factoring.

Factor Matrix	
	Factor 1
perceivedusefulnes1	.605
perceiveduseful2	.806
perceiveduseful3	.711
perceiveduseful4	.759
perceiveduseful5	.645

#### 4.4.5 The uni-dimensionality Analysis of Subjective norm

The Subjective Norm scale obtained a Kaiser-Meyer-Olkin measure of sampling adequacy value of .77 and the Bartlett's Test of Sphericity test statistic obtained a value of 224.860 (df =6; p = 0.00), presenting evidence that the correlation matrix was factor-analysable (Kaiser as cited in Field, 2005) Only one factor with an Eigen value greater than 1 was obtained. The factor matrix showed that all the items loaded on one factor satisfactorily as all factor loadings were larger than .50. The correlations matrix showed that all correlations were larger than .30 and were all significant at p=0. 00. Therefore all items were maintained.

Table 4.13

*The dimensionality Analysis Output for the Subjective Norm Scale*

		subjectivenorm1	subjectivenorm2	subjectivenorm3	subjectivenorm4
Correlation	subjectivenorm1	1.000	.363	.488	.470
	subjectivenorm2	.363	1.000	.531	.418
	subjectivenorm3	.488	.531	1.000	.582
	subjectivenorm4	.470	.418	.582	1.000
Sig. (1-tailed)	subjectivenorm1		.000	.000	.000
	subjectivenorm2	.000		.000	.000
	subjectivenorm3	.000	.000		.000
	subjectivenorm4	.000	.000	.000	

KMO and Bartlett's Test	
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.	.770
Bartlett's Test of Sphericity	Approx. Chi-Square
	224.860
	Df
	6
	Sig.
	.000

Total Variance Explained						
Factor	Total	Initial Eigenvalues		Extraction Sums of Squared Loadings		
		% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	2.434	60.847	60.847	1.943	48.571	48.571
2	.648	16.201	77.048			
3	.529	13.231	90.279			
4	.389	9.721	100.000			

Extraction Method: Principal Axis Factoring.



**Factor Matrix**

	Factor 1
subjectivenorm1	.614
subjectivenorm2	.612
subjectivenorm3	.823
subjectivenorm4	.717

#### **4.4.6 The uni-dimensionality analysis of intention to start or continue using e-banking**

The intention to start or continue using electronic banking scale obtained a Kaiser-Meyer-Olkin measure of sampling adequacy value of .50 and the Bartlett's Test of Sphericity test statistic obtained a value of 81.459 (df = 1; p = 0.00), indicating that correlation matrix was factor-analysable. Kaiser (as cited in Field, 2005) recommends accepting KMO values greater than .50 as acceptable, values between .50 and .70 as mediocre, and values between .70 and .80 as good while values between .80 and .90 are great and values above .90 are superb. The mean correlation matrix for intention to start or continue using electronic banking is .57 at p=0.00 significance level, which is acceptable. The factor matrix values of intention to start or continue using electronic banking also indicated that all the items loaded on one factor satisfactorily as all factor loadings were .76. Therefore, all the items were deleted maintained. One factor obtained an Eigen value greater than 1 and percentage of variance explained, therefore it was extracted. Since all items loaded adequately loaded on one factor they were all maintained.

Table 4.14

*The Dimensionality Analysis Output for the Intention Use E-banking Scale*

Correlation Matrix			
		intention1	intention2
Correlation	intention1	1.000	.578
	intention2	.578	1.000
Sig. (1-tailed)	intention1		.000
	intention2	.000	

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.500
Bartlett's Test of Sphericity	Approx. Chi-Square	81.459
	Df	1
	Sig.	.000

Total Variance Explained						
Factor	Total	Initial Eigenvalues		Extraction Sums of Squared Loadings		
		% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	1.578	78.891	78.891	1.154	57.687	57.687
2	.422	21.109	100.000			

Extraction Method: Principal Axis Factoring.

Factor Matrix	
Factor	
1	
intention1	.760
intention2	.760

**4.4.7 Dimensionality Analysis for Computer Confidence Subscale**

Table 4.14 indicated that the computer confidence obtained a Kaiser-Meyer-Olkin measure of sampling adequacy value of .936 and the Bartlett's Test of Sphericity test statistic obtained a value of 1133.512 (df = 45; p = 0.00), indicating that correlation matrix

was factor-analysable. The correlations among items ranged from moderate to strongly at  $p=0.00$  significant value. It was noted that only one factor with an Eigen value greater than 1 was extracted. The factor matrix also indicated that all the items loaded on one factor satisfactorily as all factor loadings were larger than .30; they ranged from .48 to .83. Therefore none of the items was deleted.

Table 4.15

*The Dimensionality Analysis Output for the Computer Confidence Scale*

		Correlation Matrix									
		cc9r	cc7r	cc6r	cc3r	cc1r	cc10	cc8	cc5	cc2	cc4
Correlation	cc9rev	1.000	.609	.521	.359	.592	.579	.662	.599	.495	.576
	cc7rev	.609	1.000	.577	.347	.689	.485	.609	.585	.527	.594
	cc6rev	.521	.577	1.000	.413	.544	.355	.511	.552	.494	.536
	cc3rev	.359	.347	.413	1.000	.412	.285	.439	.387	.312	.342
	cc1rev	.592	.689	.544	.412	1.000	.554	.617	.591	.548	.591
	cc10	.579	.485	.355	.285	.554	1.000	.633	.626	.451	.562
	cc8	.662	.609	.511	.439	.617	.633	1.000	.692	.596	.660
	cc5	.599	.585	.552	.387	.591	.626	.692	1.000	.546	.742
	cc2	.495	.527	.494	.312	.548	.451	.596	.546	1.000	.558
	cc4	.576	.594	.536	.342	.591	.562	.660	.742	.558	1.000
Sig. (1-tailed)	cc9rev		.000	.000	.000	.000	.000	.000	.000	.000	.000
	cc7rev	.000		.000	.000	.000	.000	.000	.000	.000	.000
	cc6rev	.000	.000		.000	.000	.000	.000	.000	.000	.000
	cc3rev	.000	.000	.000		.000	.000	.000	.000	.000	.000
	cc1rev	.000	.000	.000	.000		.000	.000	.000	.000	.000
	cc10	.000	.000	.000	.000	.000		.000	.000	.000	.000
	cc8	.000	.000	.000	.000	.000	.000		.000	.000	.000
	cc5	.000	.000	.000	.000	.000	.000	.000		.000	.000
	cc2	.000	.000	.000	.000	.000	.000	.000	.000		.000
	cc4	.000	.000	.000	.000	.000	.000	.000	.000	.000	

a. Determinant = .003

**KMO and Bartlett's Test**

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.936
Bartlett's Test of Sphericity	Approx. Chi-Square	1133.512
	Df	45
	Sig.	.000

**Total Variance Explained**

Factor	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	5.859	58.590	58.590	5.432	54.315	54.315
2	.821	8.213	66.803			
3	.664	6.642	73.445			
4	.543	5.431	78.876			
5	.501	5.012	83.888			
6	.427	4.272	88.160			
7	.372	3.721	91.881			
8	.295	2.954	94.835			
9	.273	2.732	97.567			
10	.243	2.433	100.000			

Extraction Method: Principal Axis Factoring.

**Factor Matrix**


	Factor 1
cc9reversed	.763
cc7reversed	.769
cc6reversed	.675
cc3reversed	.483
cc1reversed	.784
cc10	.692
cc8	.835
cc5	.821
cc2	.685
cc4	.796

## 4.5 PEARSON CORRELATIONS

Table 4.16 summarises the relationship between the variables used in the study. When interpreting the correlation results, the coefficient was used to measure the size of an effect, and the sign (either positive or negative) of the coefficient were considered. According to Lester (2007, as cited in Madhuku, 2014), correlation coefficient of less than 0.1 (or >-0.1) is considered unsubstantial; between 0.1 and 0.3 (or between -0.3 and -0.1) is considered small/ weak; between 0.3 and 0.5 (or -0.5 and -0.3) indicates a moderate effect; and 0.5 or larger (or  $\leq -0.5$ ) is considered large.

Table 4.16

*Pearson correlations*



	Computer Confidence	Intention to start or Continue using e-banking	Attitude	Subjective Norm	Trust	Perceived usefulness
Computer Confidence						
Intention	.368**					
Attitude	.602**	.456**				
Subjective Norm	.364**	.447**	.482**			
Trust	.682**	.409**	.685**	.487**		
Perceived usefulness	.548**	.591**	.635**	.593**	.644**	
Perceived Ease of Use	.698**	.448**	.729**	.507**	.747**	.696**

\*\* . Correlation is significant at the 0.01 level (2-tailed).

### 4.5.1 Computer Confidence

Table 4.16 demonstrates a strong positive relationship between attitude towards e-banking and computer confidence ( $r = .602, p < 0.01$ ). This implies that, respondents who have confidence in the computer have a more positive attitude towards internet banking. Respondents who have low computer confidence have negative attitude towards internet banking. In addition, the table shows that there is a moderate positive relationship between computer confidence and intention to start or continue using e-banking, the relationship is statistically significant relationship at ( $r = .36, p < 0, 01$ ). Therefore, the hypothesis which postulates a relationship between computer confidence and attitude towards is accepted. This means that respondents who have confidence in the computer are likely to want to start to use electronic banking or to continue if they are already using the electronic banking service.



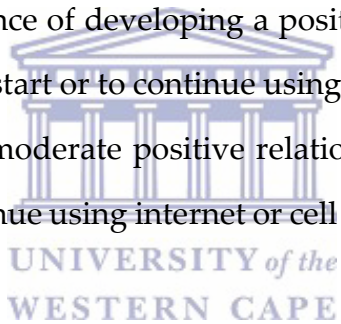
### 4.5.2 Trust

Most importantly, a strong relationship between attitude towards e-banking and trust was achieved ( $r = 0.685, p < 0.01$ ). Therefore, a null hypothesis which assumes the existence of a relationship between trust and attitude towards internet banking was accepted. This implies having trust in the internet banking results in a more positive attitude towards internet banking, thus resulting in wanting to start or continue using e-banking service. Moreover, this is also supported by the evidence which presents moderate positive relationship between trust and intention to start or continue using e-banking ( $r = 0.40, p < 0.01$ ). Additionally, a strong positive relationship between trust and computer confidence was also obtained ( $r = .685, p < 0.01$ ). This means that, respondents who have confidence in the computer are a familiar with the security aspects of the internet and cell phone banking than respondents who do not know how to use a computer. It was also

noted that, there is a strong positive relationship between trust and subjective norm ( $r = 0.54, p < 0.01$ ) meaning that the more people who use e-banking and the higher the visibility of adverts of e-banking is most likely to increase trust in the banking service.

#### **4.5.3 Subjective Norm**

Furthermore, the results of the analysis showed a moderate positive relationship between subjective norm and attitude towards e-banking ( $r = .487, p < 0.01$ ). As a result, a null hypothesis which postulates a relationship between subjective norm and attitude towards e-banking was accepted. This implies that, customers who socialize with people who use e-banking stand a chance of developing a positive attitude towards e-banking, which will result in wanting to start or to continue using e-banking. This is supported by the evidence which showed a moderate positive relationship between subjective norm and intention to start or to continue using internet or cell phone banking ( $r = .447, p < 0.01$ ).



#### **4.5.4 Perceived ease of use**

As indicated above there is strong positive relationship between perceived ease of use and attitude towards internet banking ( $r = .729, p < 0.01$ ). For that reason, a hypothesis which assumes a relationship between attitude towards e-banking and perceived ease of use was accepted. This indicates that high perception of ease of use is most likely to result in a more positive attitude towards internet banking, thus supporting the findings indicating a positive, moderate relationship between intentions to start or continue to use internet banking and perceived ease of use ( $r = .448, p < 0.01$ ). Furthermore, Table 4.16 explains a positive strong relationship between perceived ease of use and computer confidence ( $r = 0.69, p < 0.01$ ), implying that respondents who have confidence in the computer perceive internet banking to ease to use.

#### 4.5.5 Perceived Usefulness

Table 4.16 demonstrates the influence of *perceived usefulness* and *attitude towards internet banking*. As shown above, there is a strong positive relationship between perceived usefulness and attitude towards e-banking, the relationship is significant at 99% confidence interval ( $r = .635, p < 0.01$ ). Therefore, we accept the null hypothesis that there is a relationship between perceived ease of use and attitude towards e-banking. This means that, perceiving internet/ cell phone banking to be useful will result in a positive attitude towards internet banking, thus increases intention to start to adopt internet banking. Respondents who perceived internet banking to be useful want to start to use or to continue using internet banking ( $r = .59, p < 0.01$ ). Significantly, the research findings provides evidences which indicates a strong positive correlation between perceived ease of use and perceived usefulness, ( $r = .696, p < 0.01$ ). This implies that respondents who perceives e-banking to be useful experience the advantages associated with e- banking, thus as well perceiving it to be easy to use since they are used to internet banking, while those who never used e-banking before are most likely to overcome the moderating effect of ease of use to enjoy the advantages of e-banking .

#### 4.5.6 Attitude

A moderate positive relationship between attitude towards e-banking and intention to start or to continue using e-banking was recorded ( $r = .456, p < 0, 01$ ). Therefore, we accept the hypothesis that, there is a relationship between attitude towards e-banking and intention to start or continue using e-banking. This implies that respondents with a more positive attitude towards e-banking are most likely to want to start using internet banking or to continue using the service if they are already using the service.



#### 4.6 MULTIPLE REGRESSION ANALYSIS

Multiple regression analysis was used in order to determine how accurately the independent variables (perceived usefulness, perceived ease of use, and trust in the internet/cell phone banking system, computer confidence and subjective norm) predict the dependent variable attitude (attitude).

Table 4.17

*Multiple Regression Table*

Model Summary					
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	
1	.773 <sup>a</sup>	.598	.588	2.793	

ANOVA						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	2333.901	5	466.780	59.842	.000 <sup>b</sup>
	Residual	1567.847	201	7.800		
	Total	3901.749	206			

### Coefficients

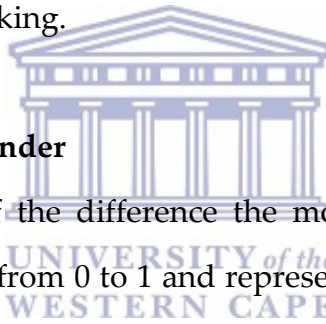
Model		Unstandardized Coefficients		Standardized Coefficients		95.0% Confidence Interval for B				Correlations		Collinearity Statistics	
		B	Std. Error	Beta	t	Sig.	Lower Bound	Upper Bound	Zero-order	Partial	Part	Tolerance	VIF
		1	(Constant)	1.871	.697		2.683	.008	.496	3.246			
	Computer Confidence	.038	.028	.091	1.367	.173	-.017	.092	.602	.096	.061	.452	2.214
	Subjective Norm	.098	.082	.068	1.205	.230	-.063	.259	.482	.085	.054	.622	1.608
	Trust	.216	.070	.227	3.061	.003	.077	.355	.685	.211	.137	.365	2.739
	Perceived usefulness	.161	.074	.151	2.182	.030	.016	.307	.635	.152	.098	.418	2.395
	Perceived Ease of Use	.366	.082	.356	4.480	.000	.205	.527	.729	.301	.200	.317	3.159

The correlations table above indicates substantial relationship among independent variables, the correlation values fall between .30 and below .70 excluding the correlation between perceived ease of use and attitude which is .72. All correlations are significant at 99% confidence interval. Therefore, there is some relationship between the independent variables and they are not highly correlated. The coefficient table indicates the contribution of each variable to the prediction of the dependent variable. Results of the regression model as presented in Table 4.17 suggest that, perceived ease of use (35.6%,  $p < 0.00$ ), perceived usefulness (15.1%,  $p < 0.030$ ) and trust (22.7%,  $p < 0.05$ ) are all statistically significant predictors of attitude towards Internet banking. The model summary suggest that 59% of variance in attitude towards electronic banking is attributed to perceived ease of use, perceived usefulness and trust ( $R^2 = 0.598$ ), with perceived ease of use making the strongest unique contribution to explaining attitude towards electronic banking, followed by perceived ease of use and trust

respectively. Nevertheless, computer confidence and subjective norm at a  $p=0.173>0.05$  and  $p=0.230>0.05$  respectively were found not significant contribution influence on attitude towards e-banking.

#### 4.7 T-TEST ANALYSIS

T-Test was used to test mean differences between groups such as male and females, mean differences between respondents who have access to internet and those who do not, mean differences between respondents who have access to a computer and those who do not, mean differences between respondents who own a smartphone and those who do not, differences between respondents who had exposure to e-banking and respondents who do not have experience in e-banking.



##### 4.7.1 Group Comparison by Gender

To calculate the magnitude of the difference the most commonly Eta Squared was utilised. Eta squared can range from 0 to 1 and represents the proportion of variance in the dependent variable that is explained by the independent variable. Eta squared was calculated because SPSS does not provide eta squared values for T-Tests. However, it was calculated using the information provided in the output. The guidelines proposed by Cohen (1998, as cited in the Pallant, 2016) were used for interpreting Eta Squared value; .01 is a small effect, .06 moderate effect, and .14 large effect. To get a percentage value of variance explained, Eta Squared value was multiplied by 100.

The procedure which was followed to calculate eta squared is presented below:

$$\text{Eta Squared} = \frac{t^2}{t^2 + (N_1 + N_2 - 2)}$$

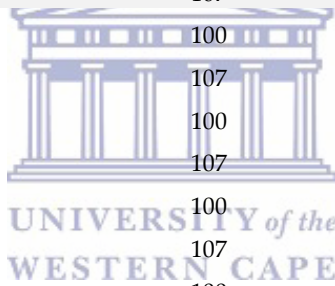
Table 4.18 outlines the T-Test analysis by Gender. An independent-samples t-test was conducted to compare attitude towards internet/ cell phone banking by gender. There

was no significant difference in scores for males (M=11.06, SD = 4.260) and (M=12.43, SD = 4.358) females. The magnitude of the difference in the means was (Mean difference = 1.374,  $p=0.023 > 0.005$ , CI: 0.193 to 2.555) large (eta squared = 0.024).

Table 4.18

*Impact of Gender on Variables*

	gender	N	Mean	Std. Deviation
Intention	Female	100	4.03	1.623
	Male	106	4.02	1.852
Computer Confidence	Female	100	27.72	10.820
	Male	107	26.43	10.259
Attitude	Female	100	12.43	4.358
	Male	107	11.06	4.260
Subjective Norm	Female	100	9.31	3.031
	Male	107	8.88	3.021
Trust	Female	100	11.65	4.571
	Male	107	10.95	4.567
Perceived Usefulness	Female	100	11.30	3.968
	Male	107	10.78	4.169
Perceived Ease of Use	Female	100	10.60	4.146
	Male	107	9.78	4.294



		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	Df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Computer Confidence	Equal variances assumed	1.550	.215	.881	205	.380	1.290	1.465	-1.599	4.179
	Equal variances not assumed			.879	202.039	.380	1.290	1.468	-1.604	4.184
Intention	Equal variances assumed	1.789	.182	.046	204	.964	.011	.243	-.468	.491
	Equal variances not assumed			.046	202.930	.963	.011	.242	-.467	.489
Attitude	Equal variances assumed	.391	.533	2.293	205	.023	1.374	.599	.193	2.555
	Equal variances not assumed			2.291	203.324	.023	1.374	.600	.192	2.556
Subjective Norm	Equal variances assumed	.136	.713	1.025	205	.306	.431	.421	-.398	1.261
	Equal variances not assumed			1.025	203.965	.306	.431	.421	-.398	1.261
Trust	Equal variances assumed	.323	.570	1.096	205	.274	.697	.635	-.556	1.950
	Equal variances not assumed			1.096	204.030	.274	.697	.636	-.556	1.950
Perceived Usefulness	Equal variances assumed	.006	.940	.925	205	.356	.524	.567	-.593	1.641
	Equal variances not assumed			.927	204.929	.355	.524	.566	-.591	1.639
Perceived Ease of Use	Equal variances assumed	.062	.803	1.403	205	.162	.824	.587	-.334	1.982
	Equal variances not assumed			1.405	204.778	.162	.824	.587	-.333	1.981

#### 4.7.2 Group Comparison by Smartphone Ownership

Table 4.19 shows T-Test analysis by smartphone ownership. The findings indicate that there were statistically significant mean differences in attitude, subjective norm, perceived ease of use and perceived usefulness between respondents who own a smartphone and those who do not.

It was noted that respondents who do not own a smartphone ( $M=14.84$ ,  $SD = 4.569$ ) had a less positive attitude towards e-banking than those who own a smartphone ( $M= 10.59$ ,  $SD =3.682$ ). The magnitude of the difference in the means was (Mean difference  $-4.244$ ,  $p<0.000$ , CI:  $-5.465$  to  $-3.023$ ) large (eta squared =  $0.1865$ ). Explained as a percentage, 18% of the variance in attitude towards internet and cell phone banking is explained by smartphone ownership. Therefore, the hypothesis (H8a) that the attitude of respondents who own a smartphone and for those who do not own a smartphone differ was accepted.

This implies that respondents who use, technology-based services stand a better chance to start or continue to use internet banking in future. However, some of the banks like Nedbank, FNB, and Standard bank have a cell phone banking which can be used for transfers, making it possible to make a payment without a smartphone. Therefore, electronic banking awareness needs to be raised, particularly paying attention on cell phone banking, since a significant number of respondents do not have access to a computer or a smartphone.

Table 4. 19

*Group Comparison by Smartphone Ownership*

	Smartphone	N	Mean	Std. Deviation
Intention	Yes	151	3.80	1.657
	No	55	4.64	1.829
Computer Confidence	Yes	152	23.84	9.384
	No	55	35.93	8.208
Attitude	Yes	152	10.59	3.682
	No	55	14.84	4.569
Subjective Norm	Yes	152	8.69	2.859
	No	55	10.18	3.227
Trust	Yes	152	9.95	4.052
	No	55	14.98	3.861
Perceived Usefulness	Yes	152	10.13	3.687
	No	55	13.53	4.073
Perceived Ease of Use	Yes	152	8.93	3.688
	No	55	13.60	3.750

**Independent Samples Test**

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Intention	Equal variances assumed	2.309	.130	-3.110	204	.002	-.835	.268	-1.364	-.306
	Equal variances not assumed			-2.970	88.273	.004	-.835	.281	-1.394	-.276
Computer Confidence	Equal variances assumed	.769	.382	-8.450	205	.000	-12.085	1.430	-14.905	-9.265
	Equal variances not assumed			-8.997	108.482	.000	-12.085	1.343	-14.747	-9.423

Attitude	Equal variances assumed	7.240	.008	-6.855	205	.000	-4.244	.619	-5.465	-3.023
	Equal variances not assumed			-6.199	80.754	.000	-4.244	.685	-5.607	-2.882
Subjective Norm	Equal variances assumed	5.281	.023	-3.201	205	.002	-1.491	.466	-2.409	-.573
	Equal variances not assumed			-3.024	86.548	.003	-1.491	.493	-2.471	-.511
				Levene's Test for Equality of Variances			Levene's Test for Equality of Variances			Levene's Test for Equality of Variances
				t-test for Equality of Means			t-test for Equality of Means			t-test for Equality of Means
Trust	Equal variances assumed	.139	.710	-7.984	205	.000	-5.028	.630	-6.270	-3.786
	Equal variances not assumed			-8.167	99.932	.000	-5.028	.616	-6.249	-3.806
Perceived Usefulness	Equal variances assumed	4.026	.046	-5.701	205	.000	-3.402	.597	-4.579	-2.226
	Equal variances not assumed			-5.441	88.007	.000	-3.402	.625	-4.645	-2.160
Perceived Ease of Use	Equal variances assumed	2.313	.130	-8.005	205	.000	-4.666	.583	-5.815	-3.517
	Equal variances not assumed			-7.943	94.282	.000	-4.666	.587	-5.832	-3.499

### 4.7.3 Group Comparison by Access to a computer

Table 4.20 indicates T-Test analysis by access to a computer. Respondents who do not have access to a computer have more negative attitude towards e-banking (M=9.33, SD= 3.367) compared to those who do have access to the computer (M=14.00, SD= 4.415). The magnitude of the difference in the means was (Mean difference -4.069, p<0.000, CI: -5.135



to -3.003) was large (eta squared =0.216. Explained as a percentage, 21% of the variance in attitude towards internet and cell phone banking is explained by access to a computer.

Therefore the hypothesis (H8b) which states that the attitude towards internet or cell phone banking is influenced by access to a computer was accepted. This implies that a significant number of respondents do not transact electronically because they do not have access to a computer.

Table 4.20

*Group Comparison by Access to a Computer*

	computer	N	Mean	Std. Deviation
INTENTIONTOTAL	Yes	115	3.74	1.660
	No	91	4.38	1.781
CCTOTAL	Yes	116	20.16	6.540
	No	91	35.85	7.716
ATTITUDETOTAL	Yes	116	9.93	3.367
	No	91	14.00	4.415
SUBJECTIVETOTAL	Yes	116	8.39	2.610
	No	91	9.98	3.290
TRUSTTOTAL	Yes	116	9.07	3.328
	No	91	14.12	4.384
USEFULTOTAL	Yes	116	9.55	3.285
	No	91	12.91	4.215
EASETOTAL	Yes	116	8.19	2.972
	No	91	12.70	4.265

## Independent Samples Test

		Levene's Test			t-test for Equality of Means					
		F	Sig.	T	df	Sig. (2-tailed)	Mean Difference	Std. Error	95% Confidence Interval	
									Lower	Upper
Computer Confidence	Equal variances	8.636	.004	-15.825	205	.000	-15.691	.992	-17.646	-13.736
	Equal variances not			-15.514	176.235	.000	-15.691	1.011	-17.687	-13.695
Attitude	Equal variances	12.743	.000	-7.524	205	.000	-4.069	.541	-5.135	-3.003
	Equal variances not			-7.286	164.121	.000	-4.069	.558	-5.172	-2.966
Subjective Norm	Equal variances	14.029	.000	-3.878	205	.000	-1.590	.410	-2.398	-.782
	Equal variances not			-3.773	168.660	.000	-1.590	.421	-2.422	-.758
Trust	Equal variances	19.236	.000	-9.426	205	.000	-5.052	.536	-6.109	-3.995
	Equal variances not			-9.123	163.592	.000	-5.052	.554	-6.145	-3.958
Perceived Usefulness	Equal variances	12.718	.000	-6.447	205	.000	-3.360	.521	-4.388	-2.333
	Equal variances not			-6.259	166.574	.000	-3.360	.537	-4.420	-2.300
Perceived Ease of use	Equal variances	37.955	.000	-8.960	205	.000	-4.514	.504	-5.507	-3.520
	Equal variances not			-8.591	154.131	.000	-4.514	.525	-5.552	-3.476

Access to a computer has a direct influence on attitude towards e-banking, since respondents who do not own a smartphone particularly require a computer in order for them to transact through internet banking. This variable was found to be having a larger effect especially to participants who bank with banks which do not have a cell phone banking facility such as: Capitec and ABSA. ABSA bank does not have cell phone banking facility whereas; the cell phone banking facility for CAPITEC bank does not allow an interbank transfer.

#### 4.7.4 T-Test Analysis by Access to internet

Table 4.21 explains the relationship between access to the internet and attitude towards internet/ cell phone banking. The results show a higher mean score for respondents who do not have access to the internet (15.18, SD= 4.0454), in comparison to respondents do not have access to the internet (M=.10.13, SD=3.485). The magnitude of the difference in the mean was (Mean difference -5.051,  $p < 0.000$ , CI: -6.135 to -3.967) was large (eta squared =0.291). This implies that 29% of the variance in attitude towards internet and cell phone banking is explained by access to the computer. Therefore, the hypothesis (H8c) that there is a relationship between the attitude towards internet banking is influenced by access to the internet was supported. As a result of this, respondents who bank with banks, which does not have cell phone banking such as ABSA bank have less behavioural intention to transact online because they have no access to the internet in order for them to transact through internet banking. Furthermore, factors such as computer confidence are most likely to come into play as well.

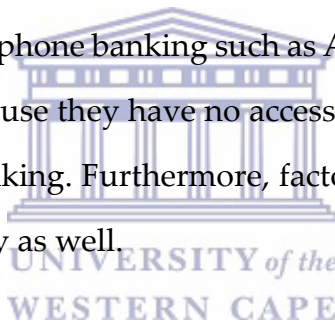


Table 4.21

*Group Comparison by Access to Internet*

	internet	N	Mean	Std. Deviation	Std. Error Mean
INTENTIONTOTAL	Yes	141	3.69	1.626	.137
	No	65	4.75	1.768	.219
CCTOTAL	Yes	142	22.30	8.280	.695
	No	65	37.45	6.769	.840
ATTITUDETOTAL	Yes	142	10.13	3.485	.292
	No	65	15.18	4.054	.503

SUBJECTIVETOTAL	Yes	142	8.45	2.694	.226
	No	65	10.48	3.260	.404
TRUSTTOTAL	Yes	142	9.28	3.644	.306
	No	65	15.68	3.083	.382
USEFULTOTAL	Yes	142	9.89	3.688	.309
	No	65	13.51	3.784	.469
EASETOTAL	Yes	142	8.49	3.287	.276
	No	65	13.85	3.730	.463



### Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	T	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Intention	Equal variances assumed	2.950	.087	-4.252	204	.000	-1.066	.251	-1.560	-.572
	Equal variances not assumed			-4.123	115.620	.000	-1.066	.259	-1.578	-.554
Computer Confidence	Equal variances assumed	1.346	.247	-12.905	205	.000	-15.150	1.174	-17.465	-12.836
	Equal variances not assumed			-13.903	149.797	.000	-15.150	1.090	-17.304	-12.997
Attitude	Equal variances assumed	4.965	.027	-9.185	205	.000	-5.051	.550	-6.135	-3.967
	Equal variances not assumed			-8.683	108.964	.000	-5.051	.582	-6.204	-3.898

Subjective Norm	Equal variances assumed	9.506	.002	-4.694	205	.000	-2.026	.432	-2.877	-1.175
	Equal variances not assumed			-4.374	105.573	.000	-2.026	.463	-2.945	-1.108
Trust	Equal variances assumed	.994	.320	-12.276	205	.000	-6.395	.521	-7.422	-5.368
	Equal variances not assumed			-13.061	145.121	.000	-6.395	.490	-7.363	-5.428
Perceived Usefulness	Equal variances assumed	2.930	.088	-6.490	205	.000	-3.613	.557	-4.711	-2.516
	Equal variances not assumed			-6.428	121.341	.000	-3.613	.562	-4.726	-2.500
Perceived Ease of Use	Equal variances assumed	7.327	.007	-10.417	205	.000	-5.353	.514	-6.366	-4.340
	Equal variances not assumed			-9.938	111.210	.000	-5.353	.539	-6.421	-4.286



#### 4.7.5 Group Analysis by Experience in Electronic Banking

Table 4.22 demonstrates a comparison of attitude towards internet/ cell phone banking between participants who currently use electronic banking and those who never used electronic banking before. The research findings show a higher mean score for respondents who never had exposure to electronic banking ( $M=13.31$ ,  $SD=4.712$ ) than those who currently use internet/ cell phone banking ( $M=9.29$ ,  $SD=2.076$ ). The magnitude of the difference in the means was (Mean difference  $-4.019$ ,  $p<0.000$ , CI:  $-5.109$  to  $-2.929$ ) was large (eta squared  $=0.3475$ ). This means that, respondents who do not have experience in e-banking a more negative attitude towards e-banking than those who have experience in e-banking. Therefore, the hypothesis (H8d) that there is a relationship between attitude towards internet banking and experience in internet banking was supported.

Table 4.22

*Group Analysis by Experience in Electronic Banking*

	Experience with E-banking	N	Mean	Std. Deviation
Intention	Yes	141	3.52	1.509
	No	65	4.35	1.809
Computer Confidence	Yes	142	21.80	6.384
	No	65	30.50	11.285
Attitude	Yes	142	9.29	2.076
	No	65	13.31	4.712
Subjective Norm	Yes	142	8.23	1.977
	No	65	9.65	3.444
Trust	Yes	142	8.45	2.223
	No	65	13.15	4.760
Perceived Usefulness	Yes	142	9.26	2.775
	No	65	12.19	4.368
Perceived Ease of Use	Yes	142	7.83	2.142
	No	65	11.71	4.556

**Independent Samples Test**

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Intention	Equal variances assumed	4.573	.034	-3.440	204	.001	-.830	.241	-1.306	-.354
	Equal variances not assumed			-3.569	193.187	.000	-.830	.233	-1.289	-.371
Computer Confidence	Equal variances assumed	68.019	.000	-6.337	205	.000	-8.691	1.371	-11.395	-5.987
	Equal variances not assumed			-7.059	201.193	.000	-8.691	1.231	-11.119	-6.263

Attitude	Equal variances assumed	46.466	.000	-7.271	205	.000	-4.019	.553	-5.109	-2.929
	Equal variances not assumed			-8.378	183.618	.000	-4.019	.480	-4.966	-3.073
Subjective Norm	Equal variances assumed	28.410	.000	-3.375	205	.001	-1.416	.420	-2.244	-.589
	Equal variances not assumed			-3.751	201.886	.000	-1.416	.378	-2.161	-.672
Trust	Equal variances assumed	94.488	.000	-8.359	205	.000	-4.701	.562	-5.810	-3.592
	Equal variances not assumed			-9.564	188.292	.000	-4.701	.491	-5.670	-3.731
Perceived Usefulness	Equal variances assumed	19.514	.000	-5.410	205	.000	-2.936	.543	-4.006	-1.866
	Equal variances not assumed			-5.913	204.827	.000	-2.936	.496	-3.915	-1.957
Perceived Ease of Use	Equal variances assumed	91.236	.000	-7.208	205	.000	-3.883	.539	-4.945	-2.821
	Equal variances not assumed			-8.241	188.824	.000	-3.883	.471	-4.812	-2.953

#### 4.8 STRUCTURAL EQUATION MODELLING (SEM)

In order to determine the fit of the structural model the LISREL programme, version 8.80, was utilised. The Robust Maximum Likelihood estimation was used to yield the estimates. Structural equation modelling is a collection of statistical techniques that allow testing set of relationships between one or more independent and dependent variables (Tabachnick & Fidell, 2001). It helps to explain the patterns of covariances found amongst the observed variables in terms of the relationships hypothesised by the measurement and structural models (Diamantopoulos & Siguaw, 2000). In addition, Structural equation modelling models can be broken down into two: the measurement model which specifies the number of factors, how the various indicators are related to the latent variable and the structural model, which specifies the relationships between the latent variables

(Brown, 2006). The complete model of LISREL consists of a combination of the measurement and structural models. Structural equation modelling is very useful in the testing of complex models. The following section discusses measurement model and structural model.

#### 4.8.1 The Measurement model

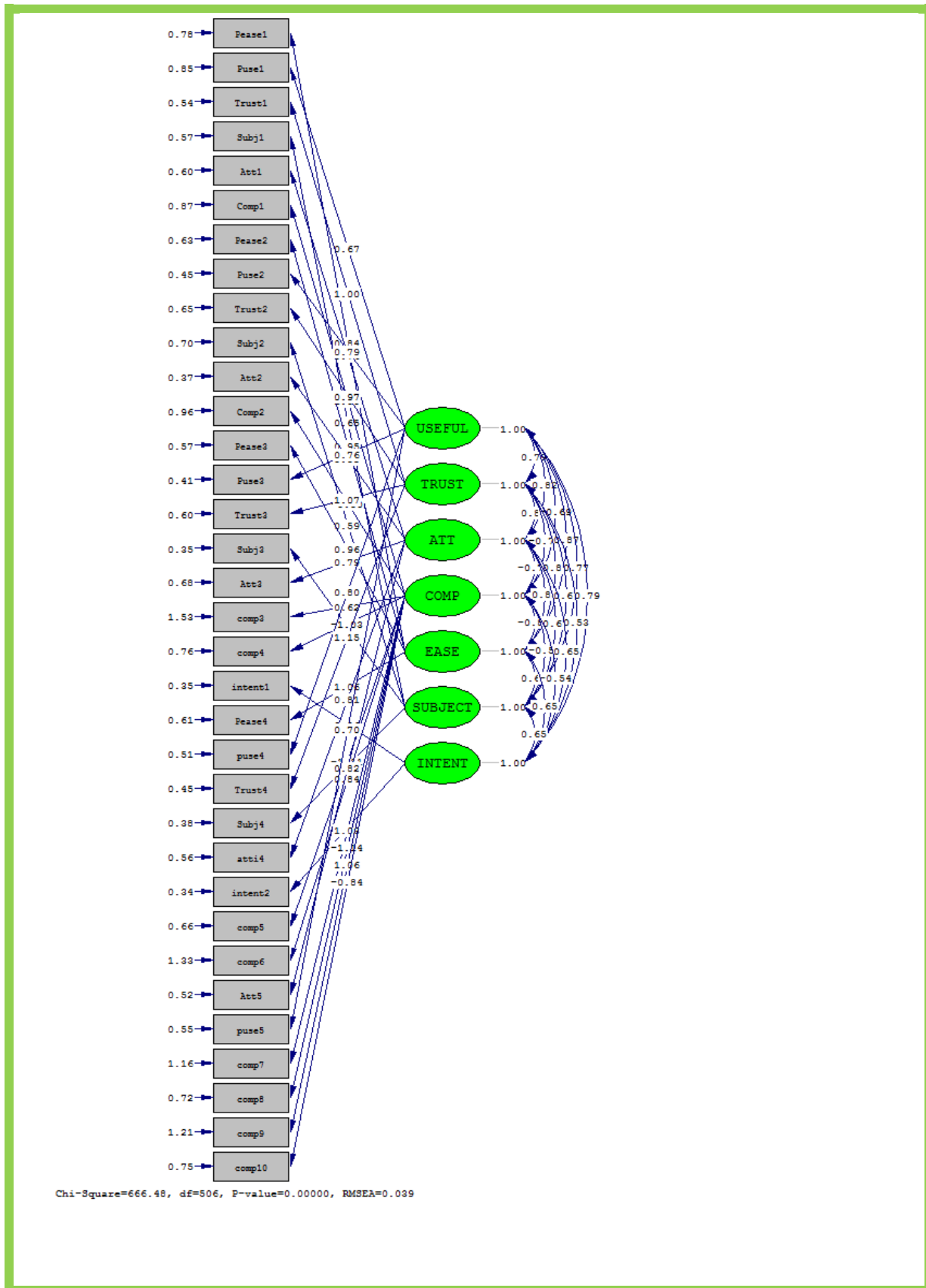
Table 4.23

*The Measurement model*

<b>Fit index</b>	<b>Value</b>
Degrees of Freedom	506
Minimum Fit Function Chi-Square	951.064 (P = 0.0)
Normal Theory Weighted Least Squares Chi-Square	931.554 (P = 0.0)
Satorra-Bentler Scaled Chi-Square	666.477 (P = 0.0)
Estimated Non-centrality Parameter (NCP)	160.477 (P = 0.0)
90 Percent Confidence Interval for NCP	(97.605 ; 231.448)
Root Mean Square Error of Approximation (RMSEA)	0.0393
90 Percent Confidence Interval for RMSEA	(0.0307 ; 0.0472)
P-Value for Test of Close Fit (RMSEA < 0.05)	0.988
Normed Fit Index (NFI)	0.967
Non-Normed Fit Index (NNFI)	0.991
Parsimony Normed Fit Index (PNFI)	0.872
Comparative Fit Index (CFI)	0.992
Incremental Fit Index (IFI)	0.992
Relative Fit Index (RFI)	0.964
Critical N (CN)	180.304
Root Mean Square Residual (RMR)	0.0783
Standardised RMR	0.0540
Goodness of Fit Index (GFI)	0.789
Adjusted Goodness of Fit Index (AGFI)	0.752
Parsimony Goodness of Fit Index (PGFI)	0.671

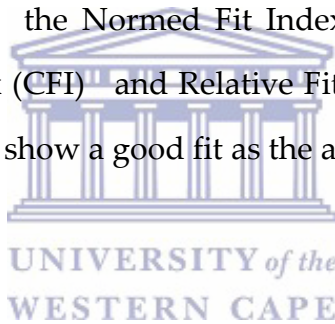


Figure 4.1



An examination of the goodness-of-fit shows that the model has achieved a good model fit. A Root Mean Square Error of Approximation value of 0.0393 shows a good fit with the data. RMSEA values below 0.05 indicate good model fit; values between 0.05 and 0.08 indicate reasonable fit whereas values above 0.08 indicate a poor model fit (Diamantopoulos & Siguaw, 2000).

The Root Squared Residual (RMR) achieved a value of 0.0783 while Standardised RMR achieved a value of 0.05. This implies that RMR value missed the 0.05 level while Standardised RMR achieved a good fit. The Goodness of Fit Index (GFI) = 0.789 and the Adjusted Goodness of Fit Index AGFI = 0.752 missed the 0.90 level indicative level of good model fit. The indices of the Normed Fit Index (NFI), Non-Normed Fit Index (NNFI), Comparative Fit Index (CFI) and Relative Fit Index (RFI) are 0.967, 0.991 and 0.992 respectively. These values show a good fit as the acceptable values are above 0.90.



#### 4.8.2 The structural model

The table below shows that the model has achieved a good fit. The examination indicated a Root Mean Square Error of Approximation (RMSEA) value of .0401. The Root Mean Square Residual (RMR) value of .0785 miss the good model fit, while the Standardised RMR value of .0545 achieved a good model fit. The statistics of the GFI and AGFI values .750 are .786 respectively failed to reach the .90 level indicative level of good model fit. The values of Normed Fit Index (NFI) = 0.991, Non-Normed Fit Index (NNFI) = 0.991, Comparative Fit Index (CFI) = 0.991, Incremental Fit Index (IFI) = 0.991 and Relative Fit Index (RFI) = 0.963 were all above the acceptable value of .90.

Figure 4.2

*The structural Model*

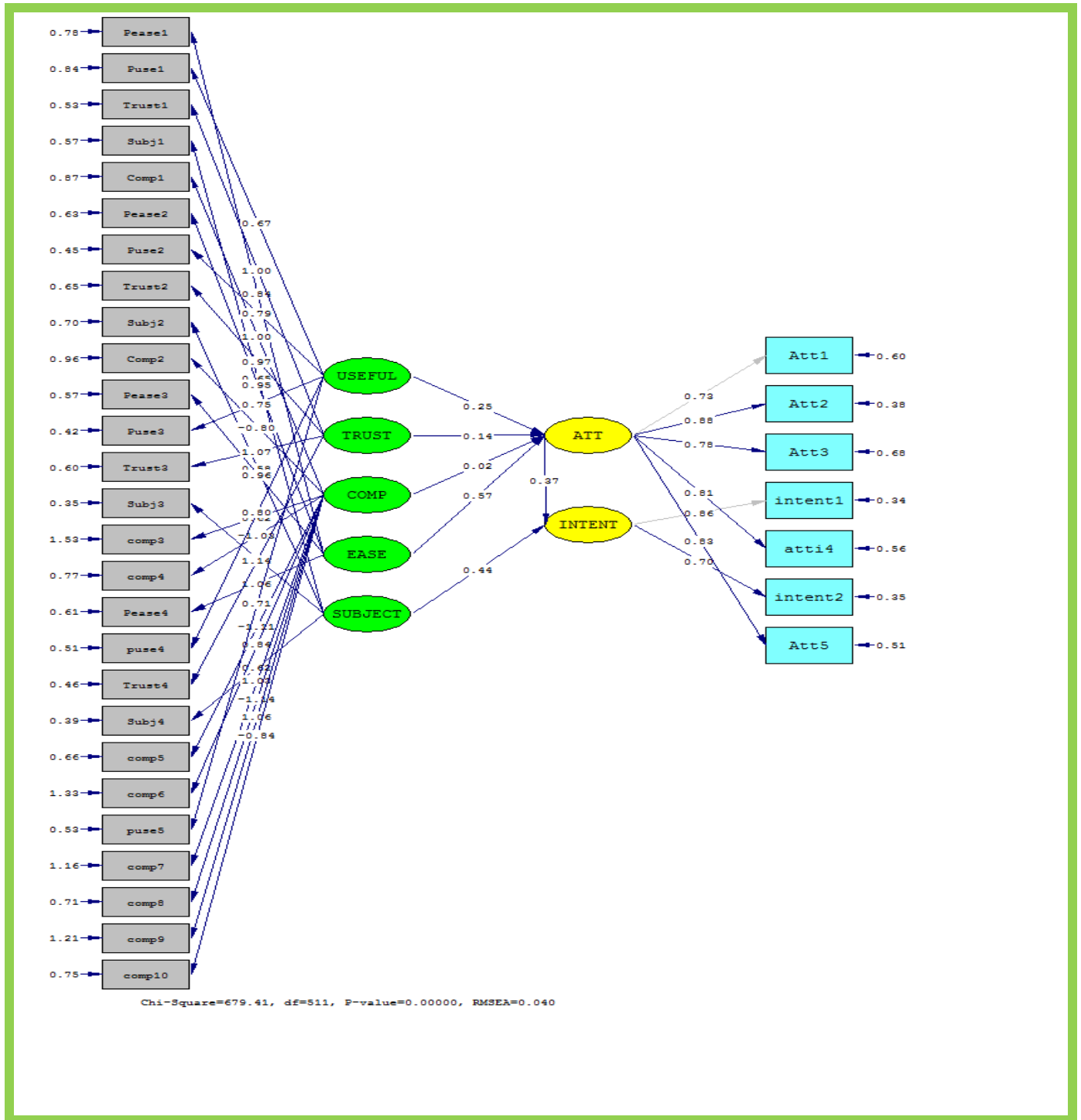


Table 4. 24

<b>Fit index</b>	<b>Value</b>
Degrees of Freedom	511
Minimum Fit Function Chi Square	969.625 (P = 0.0)
Normal Theory Weighted Least Squares Chi-Square	1847.170 (P = 0.0)
Satorra-Bentler Scaled Chi-Square	679.406 (P = 0.0)
Estimated Non-centrality Parameter (NCP)	168.406
90 Percent Confidence Interval for NCP	(104.692 ; 240.210)
Root Mean Square Error of Approximation (RMSEA)	0.0401
90 Percent Confidence Interval for RMSEA	(0.0316 ; 0.0479)
P-Value for Test of Close Fit (RMSEA < 0.05)	0.983
Normed Fit Index (NFI)	0.967
Non-Normed Fit Index (NNFI)	0.991
Parsimony Normed Fit Index (PNFI)	0.880
Comparative Fit Index (CFI)	0.991
Incremental Fit Index (IFI)	0.991
Relative Fit Index (RFI)	0.963
Critical N (CN)	178.511
Root Mean Square Residual (RMR)	0.0785
Standardised RMR	0.0545
Goodness of Fit Index (GFI)	0.786
Adjusted Goodness of Fit Index (AGFI)	0.750
Parsimony Goodness of Fit Index (PGFI)	0.675

*Goodness-of-Fit statistics for the structural model*

### 4.8.3 The parameter estimates

The structural model was evaluated to determine whether the theoretical relationship hypothesised is supported by empirical data. The tables below present the relationships between the independent and dependent variables. The process of evaluating the structural model involves an in-depth analysis of the gamma ( $\gamma$ ) and beta ( $\beta$ ) matrices. It is essential to evaluate the signs of the parameters signifying the paths between the latent variables. This is to determine the degree of consistence with the nature of the causal effect hypothesised to exist between the latent variables. Secondly, it is vital to ascertain

whether the parameter estimates are significant ( $p < 0.05$ ) as indicated by t-values greater than 1.96 (Diamantopoulos & Siguaw, 2000).

Table 4.25

*The Beta Matrix*

BETA		
	Att	Intent
	-----	-----
Att	- -	- -
Int	0.373 (0.132) 2.834	- -



Table 4.26

*The Gama matrix*

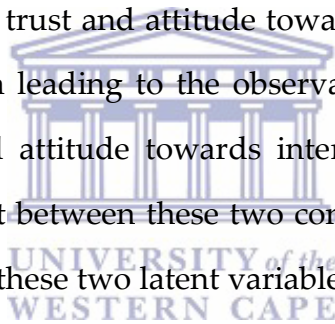
GAMMA					
	Useful	Trust	Comp	Ease	Subject
	-----	-----	-----	-----	-----
Att	0.246 (0.147) 1.681	1.144 (0.141) 1.022	0.022 (0.107) 0.208	0.570 (0.211) 2.702	
Intent	- -	- -	- -	- -	0.439 (0.111) 3.967

**Hypothesis one: Attitude towards internet banking and intention to use internet banking.**

The above table indicates that there is a relationship between attitude towards internet banking and intention to use internet banking. The t-value between attitude towards internet banking and intentions to use internet banking is greater than 1.96. A significant positive relationship between the two variables ( $p < 0.05$ ) is evident, which supports that the proposed relationship between the two latent variables was supported.

**Hypothesis two: Trust in the internet banking system and attitude towards internet banking.**

The t-value of the link between trust and attitude towards internet banking is less than 1.96 ( $t = 1.022$ ,  $p > 0.05$ ), which leading to the observation that there is no significant relationship between trust and attitude towards internet banking. A non-significant relationship is therefore evident between these two constructs, which suggests that the proposed relationship between these two latent variables was not supported.



**Hypothesis three: Perceived usefulness and attitude towards internet banking**

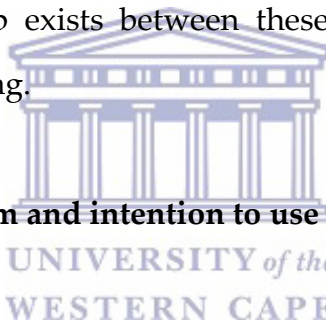
The t-value of the link between perceived usefulness and attitude towards internet banking is less than 1.96 ( $t = 1.681$ ,  $p > 0.05$ ), which leading to the observation that there is no significant relationship between perceived usefulness and attitude towards internet banking. A non-significant relationship is therefore evident between these two constructs, which suggests that the proposed relationship between these two latent variables was not supported.

#### **Hypothesis four: Perceived ease of use and attitude towards internet banking**

There is a statistically significant relationship between perceived ease of use and attitude towards internet banking ( $t=2.702$ ,  $p<0.05$ ). This finding suggests that the proposed relationship between these two variables exist.

#### **Hypothesis five: Computer confidence and attitude towards internet banking**

The t-value for the connection between computer confidence and attitude towards internet banking ( $t=0.208$ ,  $p>0.05$ ) which is less than 1.96, which states that a non-significant positive relationship exists between these two computer confidence and attitude towards internet banking.



#### **Hypothesis six: Subjective norm and intention to use internet banking**

The t-value for the connection between psychological Subjective norm and intention to use internet banking is ( $t= 3.967$ ,  $p<0.05$ ) which is greater than 1.96, which states that a significant positive relationship exists between subjective norm and intention to use internet banking.

### **4.9 CONCLUSION**

The research finding and the psychometric properties of the measuring instrument were presented in this chapter. The item analysis and dimensionality analysis proved that the tool, which was used to gather data, is reliable and valid. It is observed from the study that there is a significant positive relationship between attitude, trust in the e-banking system, subjective norm, perceived ease of use, perceived usefulness, computer

confidence and intention to start or continue using e-banking. Furthermore, a multiple regression analysis indicated that perceived ease of use is the major predictor of attitude towards e-banking, explaining 35% of the variance, whilst perceived useful explained 15% of variance and trust explained 22% of the variance. However, computer confidence and subjective norm at a  $p=0.173>0.05$  and  $p=0.230>0.05$  respectively were found not making a significant contribution in explaining attitude towards e-banking, therefore, did not wield any influence on attitude towards Internet and cell phone banking.

It was also noted that, gender did not have any influence on attitude towards internet or cell phone banking. The correlation between attitude towards internet banking, gender, education and income level was small, whereas the correlation between age and attitude towards internet banking was not significant. Significant to this study, access to technological products such as access to a computer, smartphone ownership, access to internet ad experience in the internet banking system had a stronger influence on attitude towards internet and cell phone banking. It was observed that, 18% of variance in attitude towards internet and cell phone banking was explained by ownership of a smartphone, whilst 21% of variance in attitude towards internet and cell phone banking was explained by access to computer, at the same time 29% of variance in attitude towards the internet and cell phone banking was explained by access to computer, whereas 34% of variance in attitude towards internet banking was influenced by experience in the cell phone internet banking system. On a positive note, the correlation between attitude and intention to start or continue using e-banking was moderate. This indicates that although some of the participants are not using e-banking at the moment they intend to start using e-banking in the future, to those who are already using they intend to continue using e-banking in the future.



The statistical analyses achieved through LISREL (version 8.80), supported the existence of the relationship between attitude towards internet banking and intention to use internet banking. The relationships between subjective norm and intention to use internet banking, as well as the relationship between perceived ease of use and attitude towards internet banking were supported. However, the relationships between attitude and trust, perceived usefulness and attitude towards internet banking, as the relationship between computer confidence and attitude towards internet banking were not supported. The comprehensive measurement model was assessed by means of item parcelling. Both measurement and structural models showed good fit.



# Chapter Five

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## 5.1 INTRODUCTION

The objectives of this research study was to measure the impact of the following variables on attitude towards e-banking: trust in the internet banking, perceived ease of use perceived usefulness, computer self, subjective norm. In order to answer the objectives and hypotheses postulated for the study, various techniques were used. These included the use of the Pearson Correlation to determine the relationships among the variables under investigation. Multiple regressions was used to identify the variables that predict attitude and intention to use e-banking. Some analyses were also performed to determine whether or not significant differences exist among participants with respect to the demographic variables used in the study. In addition, structural equation modelling was performed to determine the goodness of fit of the hypothesised theoretical model. The results obtained using the aforementioned techniques were presented in chapter four and are now the subject of discussion in the present chapter. The chapter also presents the practical implications, limitations of the study and direction for future studies.

## 5.2 DISCUSSION OF SPSS RESULTS

### 5.2.1 Discussion of the Correlational Analyses Results

Table 5.1

*Summary of Correlational Results*

Hypothesis	Statistical analysis technique used	Result of analysis	Comment
H1: Attitude towards Internet banking services has a significant positive effect on their intention to start using/continue using the service.	Pearson correlation	0.456**	Accept
H2: Trust in the Internet banking system and attitude towards Internet banking	Pearson correlation	0.685**	Accept
H3: Perceived ease of use and attitude towards Internet banking	Pearson correlation	0.729**	Accept
H4: Perceived usefulness and attitude towards Internet banking	Pearson correlation	0.635**	Accept
H5: Computer confidence and attitude towards Internet banking	Pearson correlation	0.602**	Accept
H6: Subjective norm and attitude	Pearson correlation	0.482**	Accept

**HYPOTHESIS 1:** Attitude towards Internet banking services has a significant positive effect on their intention to start using/continue using the service.

Research findings supported the hypotheses there is a relationship between attitude towards Internet banking services and intention to start or continue using e-banking, this

implies there is a potential that internet and cell phone banking usage will increase in the future. Therefore, there is a need to invest in the future by developing strategic measures to cover the gap between the cashless future and the current status quo.

## **HYPOTHESIS 2:** Trust in the Internet banking system and attitude towards Internet banking

As presented in table 5.1, H2 was accepted, since there was evidence to support that there is a relationship between trust and attitude towards e-banking. This confirms the findings of Bashir and Madhavaiah (2013), Chen (2013), Madhuku (2014), Mian and Rizwan (2013), who found trust playing a significant impact on attitude towards e-banking. This implies that in as much as participants would like to transact electronically they think that internet banking does not have enough safeguards to make them feel comfortable using it. Respondents also feel that legal structures do not adequately protect them from problems associated with e-banking. As a result, security features should be considered as important by South African banks because consumers are more favourably inclined towards using a service when they perceive that the information they provide during the banking transactions is secure, and third parties will not have access to it. In order to increase usage of e-banking among the South African population, banks must employ risk-reducing strategies and identity theft to help inspire confidence in potential customers. Banks should also consider focusing on preventing intrusion, fraud and identity theft. To ensure security, banks can also introduce biometric authentication technology.

In addition to the developing of secure e-banking systems, financial institutions should also include the development of marketing actions in order to show the safety of all operations of the e-banking system as well as informing customers and warn them about

the risks related to certain behaviours when transacting online as well as the existence of trustworthy technical infrastructure and assistance to consumers that would make Internet banking easy to use. By focusing on these issues, attitude towards using Internet banking can be improved, and ultimately these efforts should lead to unhindered rates of adoption in the future.

**HYPOTHESIS 3:** *Perceived ease of use and attitude towards Internet banking.*

Based on the research findings, it is clear that the positive relationship between perceived ease of use and attitude towards e-banking was the strongest in comparison to other factors which correlates with attitude towards e-banking. The direct effect of perceived usefulness on attitude towards e-banking was also supported by a number of researchers (Kejong & Yoon, 2003; Madhuku, 2014; Martins et al., 2013; Mian & Rizwan, 2013) among others. This implies that when mobile banking services are easy to use, retail banking clients feel that they will exert less effort to operate the services, leading to the development of a positive attitude towards usage. Therefore, E-banking managers must pay attention in designing easy-to-use, useful, and reliable systems. It has been noted that the cell phone banking system of all banks kicks out e-banking users so quickly resulting in embarrassment. It is recommended that slow users are accommodated because they take time to read the instructions as well as balancing the security and privacy of electronic banking. It is advised that banks initiate training interventions on e-banking so that its staff members can become familiar with internet and cell phone banking of all the banks. It is recommended that company ABC put strategic measures in place focusing on issues that affect the whole organisation such as responding to environmental change because the environment is changing tremendously. It is also advised that company ABC maps the current environment surrounding the organisation, understanding the needs of its customers, as well as the challenges which they face.

Most importantly, Capitec, IMB, BIDVEST, and Standard bank online transactions are slower resulting in customers reverting to cash transactions since it takes less than 24 working hours for their recipients to receive their money. Hence, aforementioned banks are advised to focus on the speed of transaction to enhance the usefulness and efficiency of their service.

**HYPOTHESIS 4:** *Perceived usefulness and attitude towards Internet banking*

In order to minimize the impact of perceived usefulness, it is recommended that company ABC and South African banks develop advertising campaigns on e-banking. This attracts new consumers to use internet and cell phone banking, as well as increase the frequency of use among those who are already using internet/ cell phone banking. The advertisement should pay particular attention to the advantages of using e-banking, including convenience and speed, as well as educating individual customers on its existence and its usefulness. Consumer awareness of e-banking services can also be increased by putting in place community-based workshops and through various social networks and channels, such as word of mouth and informal seminars. Moreover, banks can also raise awareness by having seminars, exhibitions or giving free-trial periods to allow consumers to evaluate their new inventions. Education and publicity through mass media also prove to be an effective marketing strategy. In addition, training can be provided to staff of company ABC to explain to customers the usefulness of e-banking.

Therefore, in order to attract new customers to use e-banking, a belief of usefulness of electronic payment must be developed. It is recommended that company ABC and banks work hand in hand to raise an awareness of the usefulness of e-banking. Awareness can be raised by increasing visibility advertisements of internet banking and cell phone banking which are currently is underrepresented in the media. Therefore, banks are encouraged to raise awareness by using the media, such as Twitter, Facebook, television

(TV) programs, mail marketing, competitions, and advertisements, educational and awareness campaigns, the distribution of brochures in shops and other public places, the daily newspapers and the TV news channels.

**HYPOTHESIS 5:** *Computer confidence and intention to adopt internet banking*

Research findings support that there a relationship between computer confidence and attitude towards internet and cell phone banking. Computer confidence has a major impact on an individual's expectations towards using computers and individuals who do not see themselves as competent computer users tend not to use computers. This implies that computer confidence is a significant predictor of e-banking adoption. Customers who do not have confidence in using a computer are most likely to perceived electronic banking as difficult to use, particularly if they bank with ABSA, which does not have a cell phone banking service. Provided that a significant number of consumers have no computer confidence, internet banking sites should be made as user-friendly as possible as not many consumers are familiar with the computer and the Internet. Providing online help and giving consumers the choice of their preferred language will ease their transactions. Bank managers are also advised to organise computer training courses to increase the general computer confidence of the consumers. This increases computer confidence and consumers will feel comfortable in using the system with ease.

**HYPOTHESIS 6:** *Subjective norm and intention to adopt internet banking.*

As indicated in table 5.1, there is a positive moderate relationship between subjective norm and attitude towards e-banking. Social influence had the least effect on attitude towards attitude internet banking. This confirms the findings Bashir and Madhavaiah (2013), Chen (2013), Madhuku (2014) who also found subjective norm to be the least valuable factor amongst all the factors. Tiago et al. (2014) holds that mobile banking is

personal and very sensitive, hence the need to show off or impress others is overshadowed by the need to keep transaction confidential and financial data secure. Therefore, it is recommended that company ABC and banks use mass media as the marketing platform.

**Table 5.2**

*Summary of T-Test Results*

Hypothesis	Statistical analysis technique used	Result of the analysis
<i>H7a: Female consumers have a more positive attitude to adopt e-banking than males.</i>	T-Test eta squared	0.024
	Sig	0.023
	N	207
<i>H8a: Access to technology-based products</i>		
<i>b) Consumers who own a smartphone have more positive attitude towards e-banking than those who do not have</i>	T-test (eta squared)	0.1865
	Sig**	0.008
	N	207
<i>c) Consumers who have access to a computer have more positive attitude towards e-banking than those customers who do not</i>	T-test (eta squared)	0.216
	Sig**	0.000
	N	207
<i>d) Consumers who have access to internet have more positive attitude towards e-banking than those who not</i>	T-test (eta squared)	0.291
	Sig**	0.000
	N	207
<i>Consumers who have experience in internet banking have a more positive attitude towards e-banking than those who not</i>	T-test (eta squared)	0.3475
	Sig**	0.000
	N	207



## 5.2.2 Discussion of the T-test Results

### **HYPOTHESIS 7a:**

*Female consumers have a more positive attitude towards e-banking than their male counterparts.*

Furthermore, the impact of the age was also measured. However, demographic characteristic did not yield any influence on customer's attitude towards internet or cell phone banking. This contrasts the finding by Rogers (2010) who found that females were likely to adopt new innovations in the banking system than males.

**HYPOTHESIS 8a:** *Customers who own a smartphone have more positive attitude towards e-banking.*



Significantly, access to technological products such as smartphone ownership had a stronger influence on attitude towards internet and cell phone banking. The research study is based on the assumption that increase in attitude towards e-banking will result in intention to start using/continue using the service. Obeka (2012) confirms that consumers who use, or have a desire to use, technology-based services in future are more technologically ready than customers who do not use, or have a desire to use, technology-based services in future.

**HYPOTHESIS 8b:** *Consumers who have access to a computer have more positive attitude towards e-banking.*

Research finding confirms the existence of a relationship between technology-based products and attitude towards e-banking. Factors such as computer confidence, access to

a computer, smartphone ownership, access to the internet, a major impact on an individual's attitude towards e-banking. This implies that although we are in the technology era a significant number of consumers have no access to technology based products. This finding is consistent with the findings by Obeka (2012), who found that customers who possess and have access to technology products or services such as computer, have a positive attitude and a higher chance of adopting e-banking than those who do not.

**HYPOTHESIS 8c:** *Consumers who have access to internet have more positive attitude towards e-banking.*

Research finding confirms the existence of a relationship between consumers who have access to internet and positive attitude towards e-banking. This supports the findings by Obeka (2012), who found access to the internet to be significant in where majority do not have access to free wifi and do not have necessary resources to transact online. Obeka (2012) went on explain that consumers who have access to wifi were more technologically ready than consumers who did not use, or have a desire to use, technology-based services in future.

**HYPOTHESIS 8d:** *Consumers who have experience in e-banking have more positive attitude towards e-banking.*

It has been confirmed that attitude towards e-banking differs between consumers who have experience in the internet/cell phone banking and those who do not have experience in the internet banking. Generally, consumers who perceive e-banking to be useful are the ones who have experienced e-banking before. It is likely that they will continue

transacting online. This confirms the finding of Chung and Lee (as cited in Alqahtani et al., 2012) who holds that consumers who have had prior experience of buying online are more likely to adopt electronic banking.

### 5.2.3 Discussion of the Multiple Regression Analysis Results

Table 5.3

*Summary of Multiple Regression Analysis Results*

Hypothesis	Statistical analysis technique used	Result of the analysis	Comment
Prediction	Simple regression		
<i>Perceived ease of use</i>	Variance Explained	35% p<0.00 Sig**	Most predictor
<i>Perceived usefulness</i>	Variance Explained	15% p<0.030 Sig**	
<i>Trust</i>	Variance Explained	22% p<0.05 Sig**	

A multiple regression analysis identified perceived ease of use as the strongest predictor of attitude towards e-banking, explaining 35% of the variance, whilst perceived useful explained 15% of the variance, whereas, trust explained 22% of the variance.

### 5.3 DISCUSSION OF THE SEM RESULTS

**Hypothesis one: Attitude towards internet banking and intention to use internet banks.**

The t-value between attitude towards internet banking and intentions to use internet banking is greater than 1.96, significant positive relationship between the two variables ( $p < 0.05$ ) is evident, which supports that the proposed relationship between the two latent variables was supported. The existence of the relationship between attitude and intention to use internet banking is consistent with previous findings by Rogers (2010) and Mian and Rizwan (2013).

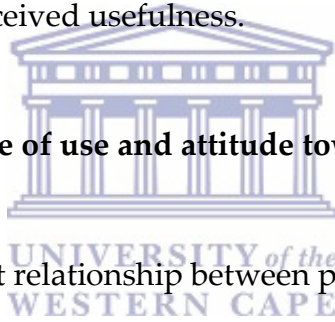


**Hypothesis two: Trust in the internet banking system and attitude towards internet banking.**

The t-value of the link between trust and attitude towards internet banking is less than 1.96 ( $t = 1.022$ ,  $p < 0.05$ ), which leading to the observation that there is no significant relationship between trust and attitude towards internet banking. Although there is inconsistency with previous findings, the research findings justifies the findings of Tiago et al. (2014) who emphasized on the moderating effect of attitude between trust and intention to adopt e-banking. Tiago et al. (2014) further added that, although trust has a direct effect on the intention to use e-banking, individuals are most likely to take risks or to have trust in a new service especially when there is reputation and assurance against risk.

### **Hypothesis three: Perceived usefulness and attitude towards internet banking**

The t-value of the link between perceived usefulness and attitude towards internet banking is less than 1.96 ( $t=1.681$ ,  $p<0.05$ ), which leading to the observation that there is no significant relationship between perceived usefulness and attitude towards internet banking. A non-significant relationship is therefore evident between these two constructs, which suggests that the proposed relationship between these two latent variables was not supported. Alqahtani et al. (2012) also confirms the weak relationship between perceived usefulness and attitude. Alqahtani et al. (2012) further explained that lack of awareness of benefits associated with internet banking play a key role in low adoption of e-banking than perceived usefulness.



### **Hypothesis four: Perceived ease of use and attitude towards internet banking**

There is a statistically significant relationship between perceived ease of use and attitude towards internet banking ( $t =2.702$ ,  $p<0.05$ ). This finding suggests that the proposed relationship between these two variables exists. This confirms the findings by a number of researchers whose findings implies that when mobile banking services are easy to use, clients feel that they will exert less effort to operate the services, leading to the development of a positive attitude towards usage (Bashir & Madhavaiah, 2013; Chen, 2013; Kejong & Yoon, 2003; Madhuku, 2014; Martins et al., 2013; Mian & Rizwan 2013; Obeka, 2012; Rogers, 2010; Tiago et al., 2014; Yi-Shun, Yu-Min, Hsin-Hui & Tzung-I, 2003).

### **Hypothesis five: Computer confidence and attitude towards internet banking**

The t-value for the connection between computer confidence and attitude towards internet banking ( $t=0.208$ ,  $p<0.05$ ) which is less than 1.96, resulting in null hypothesis being rejected. This clarifies that, e-banking is a combination of internet banking and cell phone banking; therefore, negative attitude towards e-banking is not a result of low computer confidence as clients have an option to use mobile devices. Amongst the South African population, cell phone banking was found to be more preferred to internet banking because it is perceived to be easy, quicker and convenient (Madhuku, 2014). Computer confidence becomes an important factor to customers who do not own smartphone, particularly to those customers who bank with banks which offers internet banking only such; Capitec, ABSA, Bidvest etc.



### **Hypothesis six: Subjective norm and intention to use internet banking**

The t-value for the connection between psychological Subjective norm and intention to use internet banking is ( $t= 3.967$ ,  $p<0.05$ ) which is greater than 1.96, which states that a significant positive relationship exists between subjective norm and intention to use internet banking. This support the findings of Sonja and Rita (2008) that family and mass media are significant factors that influence subjective norm.

## **5.4 PRACTICAL IMPLICATIONS OF RESEARCH FINDINGS**

Research finding confirms the existence of a relationship between technologies based products and attitude towards e-banking. Factors such as computer confidence, access to a computer, smartphone ownership, access to the internet, a major impact on an individual's attitude towards e-banking. This implies that although we are in the

technology era a significant number of consumers have no access to technology based products.

It has been confirmed that attitude towards e-banking differs between consumers who have experience in the internet/cell phone banking and those who do not have experience in the internet banking. Generally, consumers who perceive e-banking to be useful are the ones who have experienced e-banking before. It is likely that they will continue transacting online. This confirms the finding of Chung and Lee (as cited in Alqahtani et al., 2012) who holds that consumers who have had prior experience of buying online are more likely to adopt electronic banking. Therefore, in order to attract new e-banking users, a belief of usefulness of electronic payment must be developed.

It is recommended that company ABC and other financial institution work hand in hand to raise an awareness of the usefulness of e-banking. Awareness can be raised by increasing visibility advertisements of internet banking and cell phone banking which are currently is underrepresented in the media. Therefore, banks are encouraged to raise awareness by using the media, such as Twitter, Facebook, television (TV) programs, mail marketing, competitions, and advertisements, educational and awareness campaigns, the distribution of brochures in shops and other public places, the daily newspapers and the TV news channels. Most importantly, Capitec, IMB, BIDVEST, and Standard bank online transactions are slower resulting in consumers reverting to cash transactions since it takes less than 24 working hours for their recipients to receive their money. Hence, aforementioned banks are advised to focus on the speed of transaction to enhance the usefulness and efficiency of their service.

Research findings supported the hypotheses there is a relationship between attitude towards Internet banking services and intention to start or continue using e-banking. This implies that although there are a significant number of consumers who have bank

accounts who do not transact electronically they have the intention to start or to continue using internet and cell phone banking in the future.

## 5.5 LIMITATIONS OF THE STUDY AND FUTURE RESEARCH

It is important that a research study contribute to future research. This study has limitations, which could be improved in future research. The fact that the majority of participants are Zimbabweans who are based in South Africa, might have compromised the generalizability of the research findings from this study's sample to the South African population. Therefore, further research is recommended to focus on population from different demographics so that the results could be generalized to the South African population. In addition, the number of customers who have their own bank accounts is unknown and the customer database increases on a daily basis which might have implications for the generalizability of the results of the research findings. It is recommended that a longitudinal study on the subject is conducted to clarify the effects of temporal changes rather than measuring the effects at a single point in time only.

Social desirability is one of the most common sources of bias associated with the use of self-administration questionnaire, and the experiences of consumers on electronic banking vary from individuals, so it is recommended that future research adopt an inductive approach and a qualitative methodology. This will provide detailed in-depth information about the phenomenon, by doing this will minimize the disadvantages associated with Likert scale which is associated with extremity bias and centrality bias. An inductive approach will reveal information that is not known about banking.

Although the size of the sample is sufficiently large, the generalisability of the findings from this study needs to be treated with caution because the majority of the respondent were captured online. It is hoped that balancing the number of online surveys and pencil



and paper questionnaire will lead to more accurate and comprehensive results and analyses.

## 5.6 CONCLUSION

A quantitative study was conducted to measure the attitude of consumers towards internet and cell phone banking. Company ABC is a financial institution, which started accepting cashless payments only in 2015, and opened for cash transactions in 2016 after facing resistance to change by customers. A low adoption of e-banking among company ABC's customers motivated the researcher to understand their attitude towards e-banking. Although the majority of consumers do not have their own bank account, the aim of this study was to understand the attitude of consumers towards e-banking, therefore the minimum criteria to participate in this study was having an own bank account. A total of 207 participants were selected to participate, 135 surveys were administered online, whereas 72 were papers based questionnaires.

Statistical analyses such as SPSS (version 23) and LISREL (version 8.80) were utilised to measure the relationship between independent and dependent variables. The comprehensive measurement model was assessed by means of item parcelling. Both measurement and structural models showed good fit. It was noted that, gender did not wield any influence on attitude towards internet or cell phone banking. Additionally, Pearson correlation was utilised to measure the impact of trust in the internet banking, perceived ease of use perceived usefulness, computer self, subjective norm towards e-banking, all hypothesises were supported. A multiple regression analysis identified perceived ease of use as the strongest predictor of attitude towards e-banking, explaining 35% of the variance, whilst perceived useful explained 15% of the variance, whereas, trust

explained 22% of the variance. Access to a computer, smartphone ownership, and access to internet and experience in the internet banking system had a stronger impact on attitude towards e-banking. Respondents indicated a behavioural intention to start and to continue using e-banking.

It was recommended that company ABC and other financial institution work hand in hand to raise an awareness of the usefulness of e-banking. This can be achieved by increasing advertisements of internet banking and cell phone banking which are currently underrepresented in the media. Most importantly, Capitec, IMB, BIDVEST, and Standard bank are advised to focus on the speed of interbank transactions to enhance the usefulness and efficiency of their service.



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