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OF SCIENCE AND TECHNOLOGY

Faculty of Computing and Informatics

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FACTORS INFLUENCING THE ADOPTION AND REDESIGN OF THE EWALLET SERVICE IN NAMIBIA

Thesis submitted in fulfilment of the requirements for the degree of

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List of Acronyms

ATM - Automatic Teller Machine

ATU - Attitude toward using

FNB - First National Bank

PEOU - Perceived ease of use

PU - Perceived usefulness

TAM - Technology Acceptance Model

TPB - Theory of Planned Behavior

TRA - Theory of Reasoned Action

USSD - Unstructured Supplementary Service Data

DECLARATION

I, Maria Namupala Sheya, hereby declare that the work contained in this thesis presented for the degree of the **Master of Informatics** at the **Namibia University of Science and Technology**, entitled:

Factors influencing the adoption and redesign of the eWallet service in Namibia

Is my own original work and that I have not previously in its entirety or in part submitted it at any university or other higher education institution for the award of a degree.

Student name & surname: _____ Date: _____

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ABSTRACT

The use of mobile phones in everyday life has increased dramatically in recent years, making mobile phones a very integral part of our lifestyle. Namibia is amongst 105 countries with more cellular subscriptions than inhabitants.

The increased ownership of smart phones and the affordability of mobile data packages offered more ways for banks to make even more services available such as, customer-to-customer direct payment services. Banks have rolled out this service under various names such as eWallet, Blue-Wallet and Easy-Wallet. This means that, consumers no longer have to walk around with a wallet full of cards or cash as their cell phones offer access to their banks, and convenience of banking everywhere. Despite the potential benefits to consumers, especially those without bank accounts, the adoption rate among consumers was limited.

The aim of this research was to investigate the factors that are influencing consumer adoption of the eWallet service in Namibia and provide insights on how to redesign the eWallet service for increased adoption. The research methods included a semi structured questionnaire and interviews. The findings of the research indicates that, factors such as effective communication, system availability and reliability, transaction speed, usefulness, cost, system response, security and trust, convenience and accuracy of transaction influencing consumer adoption of eWallet services. A redesign of the eWallet service based on the findings and design heuristics were proposed.

CHAPTER 1: RESEARCH INTRODUCTION

1.1 Background

The usage of mobile phones in everyday life has grown dramatically in recent years making mobile phones a very integral part of our lifestyle (Chatterjee, 2014). One of the key features driving growth in mobile phones is that they are small, lightweight but offer powerful computing capability and internet connectivity, so they are inherently suited to areas with poor technology infrastructure. The adoption of mobile phones has occurred at perhaps the fastest rate and to the deepest level of any consumer technology adoption in history (Jack & Suri, 2010).

In 2012, Namibia's Minister of Information and Communication Technology indicated that Namibia is amongst 105 countries with more cellular subscriptions than inhabitants as Namibia has more mobile phones subscriptions than their individual population (The Namibian, 2012; David, 2015). In 2017, mobile penetration countrywide had reached 117% and mobile broadband coverage covers 95% of the country (MTC, 2017). Prepaid mobile data packages are among the most affordable on the continent (Stork and Calandro, 2014) where smart phones and feature phone usages are high. Namibia has 31% unique internet users and 22% Facebook users over its total population, so the actual number of users for the active age group above 15 years is much higher (Worldinternetstats, 2019).

Furthermore, statistics from the World Bank (2015) show that only about a fourth of Africa's 1.4 billion people have a bank account, but 40 percent have a mobile phone with smartphone penetration expected to continue rising.

According Nielsen Holdings' Mobile Consumer Report (2013), people use their smart phones for text messaging, email, instant messaging, social networking, streaming online, video/mobile TV, location-based services/GPS, mobile banking, mobile shopping, NFC/Mobile wallet web browsing, applications, barcode or QR scanning etc.

Increase in mobile phone ownership gave banks an opportunity to adapt their services as well. So banks offered mobile banking to consumers since 2006 when services for buying prepaid airtime or electricity and mobile payments were first introduced for feature phones using Unstructured Supplementary Service Data (USSD) (Wezi Tjaronda, Kundana, 2006). The increased ownership of smart phones and the affordability of mobile data packages offered more ways for banks to make even more services available such as customer to customer direct payment services. Local banks have introduced this service under various names such as eWallet by First National Bank (FNB), Blue-Wallet by Standard Bank, Easy-Wallet by Bank Windhoek.

1.2 Problem statement

Mobile banking has made life more convenient as it has increasingly grown common in the Namibian industry. The increase in mobile phone ownership, extensive country-wide coverage and affordability of mobile internet packages, meant that banks also availed their services to consumers via mobile platforms. Data from First National Bank (FNB) Namibia revealed that there is currently about 750 000 eWallet accounts of which some 420,000 accounts were active and more than half of these eWallets were held by individuals with no FNB account (The Namibian, 2015). Other banks followed suit with similar mobile wallet systems. Mobile Telecommunications Limited (MTC) launched their mobile payments solution known as MTC Money in 2015 and indicated that Namibians can use their phones to pay bills, buy airtime, buy goods and make payments, and use their phones as mobile digital wallet (MTC, 2014). This means that consumers no longer have to walk around with a wallet full of cards or cash as their cell phones offer access to their banks and convenience of banking everywhere.

In 2014, many FNB customers took to the newspapers about not receiving notifications after having made transactions using cellphones (Timoteus Shihepo, 2014). Some customers who bought electricity either through eWallet and Cell phone banking were not receiving their electricity tokens. Another customer indicated that *“Someone eWallet me more than N\$800 on the 1st of August but I never received a SMS notifying me that I received the money. This is despite the fact that the amount indicated that it went off from the senders account. I was then only able to access my money after 10 days or so”*.

Motlhala (2014) while assessing the adequacy of management strategies influencing customers' adoption of eWallet services in South Africa, First National Bank found that they made several efforts to resolve eWallet related issues that were raised by clients, however, FNB has challenges in comprehending the behavioural factors influencing customers' adoption of eWallet. It was revealed that employees lack training on how to market eWallet services, however, the challenge was enhancing eWallet operating

skills in the general public. Moreover, FNB also has challenges in providing the required civic education to the public, especially on the benefits of using eWallet. It was recommended that FNB needs to develop eWallet operating skills in the general public; by providing civic education to the public on the benefits of using eWallet; and ensure that there is infrastructure in the rural populations where eWallet money is cashed.

Mobile banking services enable consumers to use their mobile phones for a variety of services such as, buying airtime, prepaid electricity, make payments, receive and send money. The latter service of sending and receiving money via cell phone is enabled under different names at various banks. One bank, First National Bank, called their cell phone banking service “eWallet” and this service allows bank account holders to send money to non-account holders via their cell phone number. The recipients simply withdraw the money from an ATM using their cell phone number and a pin code. Perhaps the main driver of eWallet is the convenience it offers in terms of mobility and that there is no need to walk around with a wallet full of cash, as the cell phone offers instant access to the bank and the convenience of banking anywhere anytime, even without your Automatic Teller Machine (ATM) card (FNB Namibia, 2017).

A study done in South Africa reports that FNB has faced challenges in influencing the adoption of eWallet by customers to realise economies of scale (Motlhala, 2014). Research studies done in other African countries such as those done by Ondieng (2012), Matthew (2014), Ismail and Masinge, (2012), Maradung, (2013) and Motlhala (2014) identified the lack of consumer adoption as the major challenge for mobile wallet services. Mobile wallet services thus still need to improve its design to drive adoption. However, it is not certain whether the same challenges are faced in Namibia because of limited research available in Namibia.

Despite the potential benefits to consumers, especially those without bank accounts, it is not forceful enough to compel the consumer to use it. Thus, it is very crucial to investigate the factors influencing usage and adoption (Amoroso & Magnier-Watanabe, 2012).

One important factor hindering adoption is the User Experience (UX) of the product. UX is the individual feeling of the user towards the product, and it is the sum of the contents of what the user feels and obtains in the process of using the product (Zhou & Wang, 2010). If the user is not feeling entirely well when using the product, they will most likely not use the product. There are numerous UX factors that could contribute to adoption. These factors include access to ATMs; English literacy; technology self-efficacy; cost; trust; security including device security; liability; complexity of service and other usability factors.

Therefore, the problem that this research will investigate is the factors that are influencing consumer adoption of eWallet in Namibia and provide insights on how to redesign the eWallet service accordingly.

1.3 Research Objectives

The main objective of this research is to investigate the factors that are influencing consumer adoption of eWallet in Namibia and provide insights on how to redesign the eWallet service in Namibia for increased adoption.

Sub-objectives of this research include:

- To investigate how consumers perceive and use eWallet services
- To examine factors influencing consumer adoption of eWallet services
- To redesign eWallet services in order to increase adoption by consumers

1.4 Key research questions

Research Questions

- RQ1: How do consumers perceive and use eWallet services?
- RQ2: What are the factors influencing adoption of eWallet services?
- RQ3: How can the eWallet service be redesigned to increase adoption?

1.5 Significance of the study

Mobile wallet adoption is a poorly researched area in academic research in Namibia. Commercial research might exist, but it is inaccessible to researchers because it is the confidential information of the bank. Therefore, this study would also serve as a source of knowledge for those who wish to carry out research into a similar field and also contribute to the body of knowledge in the IT sector.

Through understanding the major factors that are influencing consumer adoption of mobile banking, the results will help banking services to match the actual perception of customers by using technology. Hence, a prototype of a redesigned service considering all the factors will be developed and tested.

It is anticipated that the research will enlighten consumers, bankers, government and the general public on the factors influencing consumer adoption of eWallet services in Namibia.

1.6 Delineations and Limitations

- One limitation pertains to the language in which the questionnaires and interviews was administered in, both the questionnaire and interview questions were administered in English and no other translation will be provided or made. The study was carried out in English and results also reported in English. This limited the sample only to English literate consumers.

- Participants- The participants in this study were not all inclusive as the study did not represent the entire group of FNB eWallet users. However, regardless of the above shortcomings, it is nonetheless anticipated that the information presented could contribute to the body of knowledge and understanding of the dynamics influencing customers' adoption of eWallet at FNB. The participants also included those bank users who did not use any eWallet services.
- Limited Information- Limited academic studies exist in Namibia around the adoption factors for mobile wallet, thus there is little foundational information. Most of the research is commercial and the property of the Bank.
- Brochures for the eWallet Services are in different languages but actual transactions in the system are carried out in English.

1.7 Summary of the Chapter

This Chapter focused on introducing the study at hand. Motivation of the study research questions, as well as research objectives were discussed here. The researcher has also identified the significance of the study. Furthermore, the delineations and limitations of the study were discussed.

CHAPTER 2 PRELIMINARY LITERATURE REVIEW

2.1 Introduction

This chapter is aimed at analysing existing literature in the field to provide a justified background, generate applicable theories and establish the gap existing in the literature. The literature review discusses mobile wallet services offered by FNB Namibia.

2.2 Overview

Mobile Banking

Mobile banking (m-banking) is defined as the term used to define financial transactions through customers' handheld mobile phones delivered via mobile networks (Amin, 2007). Such services include sending and saving money, transferring money between two accounts, depositing, withdrawing, making bill and other payments, buying airtime and buying goods and services. Internet banking on the other hand, is referred to when a consumer uses a laptop with Internet connection and connects via its online banking platform to the bank (Bångens & Söderberg, 2008).

There are over one billion people in Africa, Latin America and Asia who don't have a bank account but have a mobile phone and this number is set to reach 1.7 billion by 2021 (Ondiege, 2010). So, m-banking is a powerful way to deliver savings services to the billion people worldwide who have a cell phone but no bank account. Mobile banking has several advantages over the traditional methods of banking as it eliminates geographical constraints, offers immediacy, security and efficiency (Ondiege, 2010).

Mobile wallet offers financial service to the 'unbanked' individuals as Scharwatt, Katakam, Frydrych, Murphy and Naghavi (2014) refers to individuals without a bank account. Mobile wallet services also offers consumers a convenient way of delivering money in a fast, secure and low-cost way. Services include: sending money, and purchasing goods and services using their mobile phones, Hughes and Lonie (2007).

Mobile wallet also attempts to help overcome the growing problem of theft, experienced by many forced to carry large sums of money, such as travellers or migrant workers, Davidson and McCarty (2011).

Klein and Mayer (2011, page 5) also describes another dimension to mobile wallet services: “A further feature of mobile banking is the way in which it facilitates the development of relations of trust where previously there was no basis for it. Mobile banking provides instantaneous and traceable record of transactions that were otherwise anonymous and unverifiable through cash”. Dlamini (2016) postulates that as the integration and use of mobile phones continues to increase amongst consumers, the adoption of mobile wallet services will also be integrated into consumers’ everyday lives.

Namibia has numerous commercial banks and outlets that offer mobile wallet services to their clients, for example eWallet by First National Bank and Blue Wallet by Standard Bank. However, this research will be focused on First National Bank (FNB) eWallet.

FNB eWallet

The eWallet service allows FNB customers to send money to anyone with an active cell number. Money is transferred instantly. Recipients can use the money in the eWallet to buy airtime, buy prepaid electricity, and send money to other cell phones and more.

FNB eWallet offers customers a virtual bank account using just a valid cell phone number whereby money is to be stored in an eWallet. Money can be sent anytime and from anywhere, even from the comfort and safety of your own home. The money is sent immediately, so the recipient will have access to it as soon as it has been sent. Recipients will be able access the money immediately at an FNB ATM without needing a bank card and without filling in any forms. A dormancy fee of N\$ 5.00 will be charged from an eWallet if the wallet has not been used for 6 months. Reversal fee of N\$ 25.00 will be charged for eWallet reversal requests. Recipients also do not have to withdraw all the money at once. Recipients can also check the

balance, get a mini statement, buy prepaid airtime, send money on to someone else's cell phone. Furthermore, FNB eWallet can also be accessed through Cell phone Banking by dialling a combination USSD code for feature phone users, FNB Online Banking, FNB Mobile App or at any FNB ATM, (FNB, 2017).

Blue Wallet by Standard Bank

According to the Standard Bank website (2016), Blue Wallet is a virtual account that allows the consumer to securely store, spend and save funds. Recipients will receive a voucher and for extra security, the pin will be sent to the issuer who will forward it to the recipient. The funds can then be redeemed at any Standard Bank ATM. Features of the BlueWallet include: saving funds; sending money to anyone in Namibia with a registered mobile number; transferring funds from a Standard Bank account; MobiPay Kiosk or any Standard Bank Branch to a BlueWallet (Standard Bank, 2016).

Benefits of the Blue Wallet include using the WiCode option to pay for goods at selected retailers (Pick 'n Pay and Woermann Brock); make balance enquiries and view recent transactions; buy prepaid airtime from MTC and TN Mobile; pay for DSTV, GOtv and BoxOffice; buy prepaid electricity from City of Windhoek, Rehoboth, Nored, Cenored, ErongoRed and Oshakati; pay any rates and taxes to City of Windhoek and the Municipality of Walvis Bay. Blue Wallet can be accessed through customers' mobile phones by dialling a USSD code or via the Standard Bank website. Blue wallet is relatively affordable as issuing a Blue Voucher costs N\$5.00, airtime purchases fees are N\$1.00, money transfers fees are N\$2.50 while electricity purchases are fee free.

Easy Wallet by Bank Windhoek

Bank Windhoek's Easy Wallet offers a method to send money to Bank Windhoek or non-Bank Windhoek clients using a mobile device (Bank Windhoek, 2019). A Bank Windhoek account holder can send Easy Wallet to anyone with a registered Mobile Telecommunications (MTC)'s number through Cell phone

Banking or the Bank Windhoek Mobile Application. Easy Wallet recipients receives an SMS notification of the sender's name and Easy Wallet amount. Easy Wallet recipients will have to dial a USSD code to redeem their Easy Wallet. Benefits of Easy wallet include viewing your balance, withdrawing money, and purchasing prepaid services such as airtime and electricity.

M-PESA

M-PESA is a mobile money service that was launched by Kenya's major mobile operator, Safaricom, in 2007. M-PESA's mobile money transfer service allows the consumer to send and receive money through their registered mobile phone. M-PESA is available to all Safaricom subscribers who have registered for the M-PESA Services whilst customers on other Networks may have limited range of functionality. Consumers may register for M-PESA with any M-PESA Cash Merchant or any Safaricom retail centre by completing the registration form. Consumers may acquire E-Money in their M-PESA account by depositing cash at an M-PESA Cash Merchant outlet or receiving a remittance of E-Money from another M-PESA participant. This works through an international money remittance from a participating remittance service provider or through any other acceptable means that Safaricom may provide (MPSEA, 2010).

M-PESA allows customers to deposit and withdraw cash from their accounts by exchanging cash for electronic value at a network of retail stores. MPESA also allows consumers to transfer funds to other consumers, pay bills and purchase prepaid electricity and airtime.

M-PESA registration is free, making deposits into an MPESA account is also free. Customers are charged flat fees of approximately \$0.403 for person-to-person (P2P) transfers and bill payments, \$0.33 for withdrawals (for transactions under \$33) and \$0.013 for balance inquiries (Mas & Radcliffe, 2010).

There are several other mobile payment services such as: MobiPay, NamMic Payment Systems, Wizzit, MTN Mobile Money and Airtel Money.

Overview of eWallet

Although there is a variety of mobile operators in Namibia, eWallet can only be sent to anyone with a registered MTC Cell phone number. Furthermore, once an eWallet has been received, it cannot be sent to anyone else.

Unlike M-PESA, an innovative payment service for the unbanked (Hughes & Lonie, 2007), eWallet does not account for the unbanked as the only way to transfer money to Wallet is by having someone with an FNB Account send it to the individual. Whilst with M-PESA customers can turn cash into e-money at Safaricom dealers (Hughes & Lonie, 2007).

eWallet transactions are relatively costly as compared to Standard Bank's Blue Wallet and Bank Windhoek's Easy Wallet. As issuing a Blue Wallet cost N\$5.00 whilst issuing an eWallet costs about N\$10.00.

One major drawback of eWallet as compared to MPSEA is that M-PESA allows customers to exchange cash for electronic value in a network of retail stores (Mas & Radcliffe, 2010). This feature reaches many people as consumers need to have access to an ATM in order to access their cash. This is a feature that eWallet currently does not offer. This feature will prove to be very effective especially in rural areas where there are few ATMs available and consumers have to travel long distances to access their eWallet and withdraw cash. This provides greater convenience to the consumers and lowers the cost of access.

M-PESA's presence in rural areas is particularly important, because access to financial services in such areas is limited and the ability to use existing retail stores as M-PESA cash-in/cash-out outlets reduces deployment costs, provides greater convenience, and lowers the cost of access compared with other financial service outlets.

One of the benefits of eWallet as compared to Blue Wallet is that it allows the customer to withdraw only a portion of their eWallet amount. Money not used remains on the customer's eWallet until used. However, after six months of inactivity on an eWallet a dormancy fee is introduced to cover costs. Whilst with Blue Wallet, clients are only allowed to redeem the whole voucher.

Other benefits include the fact that the customer have an option to not send the pin thereby increasing usability of the process, whilst with Blue Wallet the sender always needs to send the pin. This however poses a security factor on the service as mobile phones can always fall in the wrong hands.

Innovative Uses of eWallet

Innovative use of eWallet includes sending pocket money as many parents are now using eWallet as means of sending pocket money to their dependents. EWallet has also proven to be a faster way of submitting contributions to events such as fund drives, wedding parties as it is convenient and readily available. Other uses of eWallet include; paying for goods (transport etc), buying Prepaid, and transferring of money. EWallet also acts as a virtual checking account for those without bank accounts.

Mobile Banking Ecosystem

Figure 1 illustrates the relationship between the different potential players in the mobile banking ecosystem. Mobile networking companies play a major role in the mobile banking ecosystem as they offer the platform for transactions.

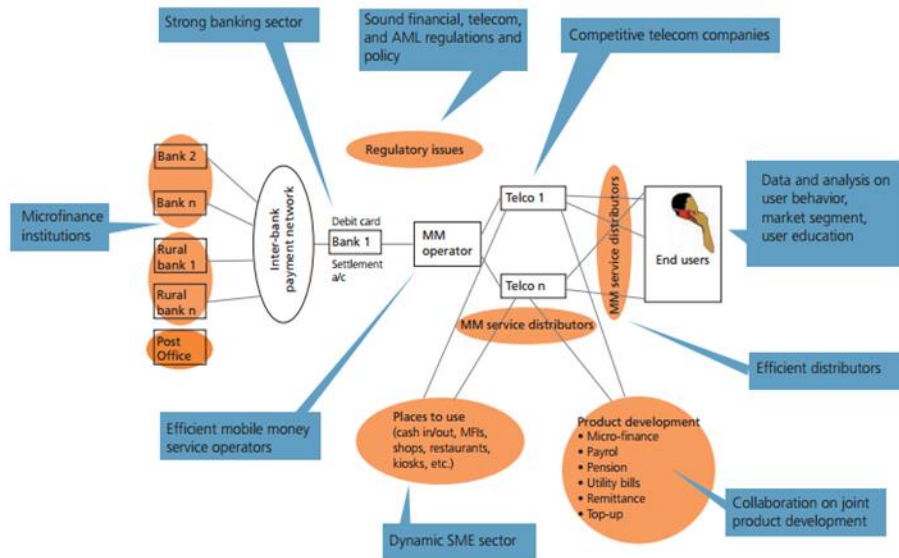


Figure 2.1: Sample mobile money ecosystem configuration (Jenkins, 2008)

The eWallet Ecosystem and Essential Components

ATM - Automatic Teller Machine

Sender - Person who initiates the transfer of funds via cell phone banking to the receiver

Receiver - The person who receives the eWallet money. The receiver needs an active cell phone number.

Principal Amount - The principal amount sent by a Sender to Receiver, this amount excludes the transactional fees to be paid by sender to the bank. This amount then forms part of the Receiver's eWallet balance. Allows the receiver to initiate and conclude transactions i.e. buying prepaid airtime.

Mobile Phone – A mobile cell phone owned by either the sender or the receiver that enables the use of eWallet via communication networks.

SMS - Short message service, which is an electronic message, sent using a cell phone or cellular network to the receiver. The receiver of an eWallet will receive an SMS that indicates how much money was sent to their eWallet and how they can access or use eWallet. An optional pin if the sender chooses to send an optional pin to the receiver.

Terms and Conditions - The terms and conditions of eWallet under which the service is accepted and used.

PIN – Short for Personal Identification Number. A pin is sent to the receiver as a message. The pin is used as an authentication to authenticate withdrawal of an eWallet.

2.3 Mobile Banking and financial inclusion for non-banked sectors

Ghosh (2013) observed that financial institutions find it expensive to set up bank branches in rural areas because transactions are limited and are of small value. Therefore, certain rural regions and certain populations who are typically low-income, might find themselves excluded from the formal financial landscape. However, Ghosh (2012) argues that an ideal inclusive financial system should aim to address the needs of everyone, including the poor, and including unserved regions. Hence the need for mobile banking to cater for the unbanked areas and population.

Hinson (2011) claims that the current financial setting excludes the poor, and the poor should be offered banking services through mobile technologies. Mobile phones serve as a unique channel to connect the unbanked populations to financial services (Porteous, 2006). Ghosh (2012) refers to the mobile phone as a link to formal financial services. Furthermore, Porteous (2006) believes that mobile banking has the potential to be transformational, because it uses existing mobile communications infrastructure which already reaches unbanked people and is cheaper than traditional banking. The World Bank (2015) indicated that only about a fourth of Africa's 1.4 billion people have a bank account, but 40 percent have a mobile phone. The rapid spread of mobile phones means that the number of mobile users has already exceeded the number of banked people in many low-income countries.

While examining mobile banking, Porteous (2006) introduced two mobile banking models: additive and transformational models. Additive models are those in which the mobile phone serves as another channel to an existing bank account. The mobile phone is one of multiple ways to access a bank account (Ghosh,

2013). Whilst transformational models are those in which the financial product linked to the use of the phone is targeted at the unbanked. The mobile phone serves only as a channel to connect unserved populations to financial services. Ozil (2006) further states that the mobile phone platform reduces the cost of delivery of the financial services at the customer end as well by lowering the costs of accessing these services.

Previous similar studies that investigated the usability of existing mobile payment services like those done in South Africa (Motlhalo, 2014), Matthew (2014), Uganda (Ghosh, 2012), India (Medhi, Gautama & Toyama, 2009), Kenya (Jack & Suri, 2010) found that users often have difficulty in understanding or navigating the user interface. These studies identified that the ultimate drivers behind mobile banking are; inclusiveness of the unbanked, speed, reliability and convenience, as well as reduced expenses. They also found that the lack of consumer adoption was the major challenge for mobile wallet services.

Information System Adoption

Understanding what drives consumers and end-users to adopt and use a certain technology has become of increasing interest in the IT research field (Wang et al 2013; Davis, 1989; and Al-Somali et al., 2009).

2.4 Theories in the Adoption of banking services

Different models and frameworks have been developed to explore factors influencing technology acceptance and adoption (Pfeffer, 1982). These frameworks and models include among others the Technology Acceptance Model (TAM) (Davis, 1989), and various extended models of the TAM (Davis et al.); Theory of Reasoned Action (TRA) (Ajzen and Fishbein, 1975), Theory of Planned Behavior (TPB) (Ajzen, 1985). Among the many adoption models and frameworks, the TAM has been claimed to be the most influential and widely adopted to predict the acceptance and use of various technologies due to its

strength in theoretical basis and empirical support (Saga & Zmud, 1994). Therefore, TAM will be appropriate for this research as it deals with adoption factors and its instruments can be readily used to guide and assess the data collection, analysis and interpretation of this research.

2.4.1 The Technology Acceptance Model (TAM)

The Technology Acceptance Model (TAM) as depicted in Figure 2.2 proposed by Davis (1989) is a model for predicting user acceptance of various software products and systems based on user perception (Chan, Teo, Yang & Yan, 2004). TAM has been tested widely with different samples in different situations and proven to be a valid and reliable model explaining Information System acceptance and use (Mathieson, 1991; Davis, 1996). Developed originally by Davis in 1989, there are several adaptations of the model (Chan, Teo, Yang, & Yan, 2004)

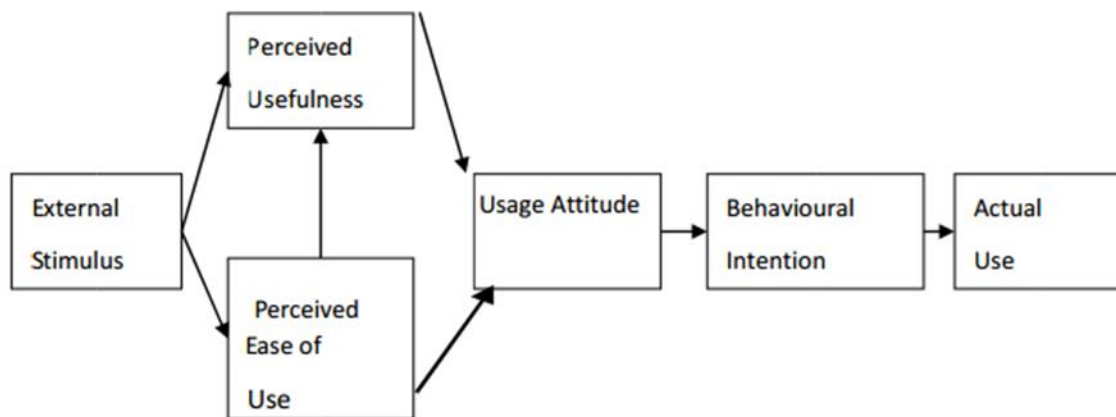


Figure 1.2: Technology Acceptance Model (Davis et al., 1989).

2.4.2 Theory of Reasoned Action (TRA)

Theory of Reasoned Action is one of the most important and influential models in the field of human behaviour and is depicted in Figure 2.3 (Al-Mamary, Alnashmi, Hassan & Shamsuddin, 2016). Dmitrii

(2018) indicates that the Theory of Reasoned Action is for predicting acceptance of technologies and for understanding a wide range of other human actions.

The Theory of Reasoned Action (TRA) works on the basis that an individual's intent to adopt an innovation is influenced by the individual's attitude towards the behaviour and subjective norms. These norms are beliefs about what others will think of the behaviour; the perceived influences of social pressure on an individual to perform or not perform the behaviour (Sadeghi & Farokhian, 2011).

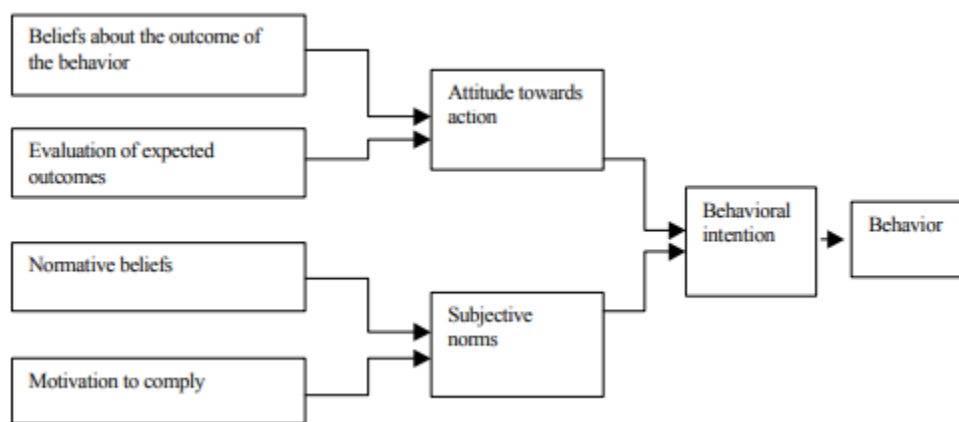


Figure 2.2 Theory of Reasoned Action (TRA) model (Sadeghi & Farokhian, 2011).

2.4.3 Theory of planned behaviour (TPB) Model

Theory of Planned Behaviour Model as shown in Figure 2.4 was developed as an extension for Theory of Reasoned Action, in order to improve its alignment with real life behaviour (Al-Mamary, et al., 2016). Theory of planned behaviour (TPB) Model indicates that, an Individual's behaviour is determined by perceived behavioural control and intention (Sadeghi & Farokhian, 2011).

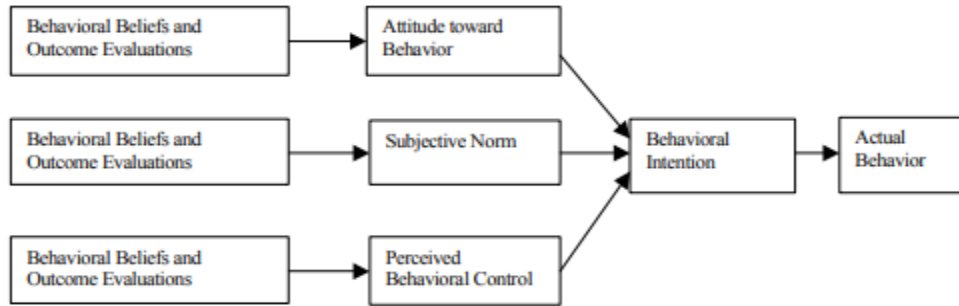


Figure 2.3: The Theory of planned behavior (TPB) Model (Sadeghi & Farokhian, 2011).

2.4.4 Diffusion of Innovations Theory (DOI)

DOI model examines a diversity of innovations based on four factors which are the time, channels' communication, innovation or social system, which influence the spread of a new idea (Rogers, 2003). Figure 2.6 displays the diffusion as the process by which (1) an innovation (2) is communicated through certain channels (3) over time (4) among the members of a social system.

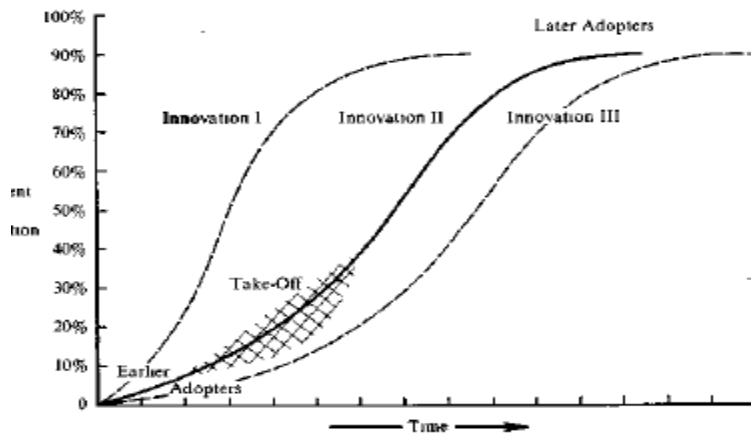


Figure2.4:The Diffusion Innovation process (Rogers 2003).

These theories have been used extensively in previous literature. This TAM theory is deemed the most appropriate for this research as it measures different factors such as perceived usefulness, perceived ease of use, usage attitudes, behavioural intention and actual usage. This research also considered the adoption factors such as usefulness, user-friendliness and usage patterns. The instruments for TAM have

been extensively verified for validity and reliability, therefore some questions from this model will be included in the survey instrument.

2.5 Summary of Chapter

This Chapter gave an overview of mobile banking and introduces eWallet. This Chapter also discussed the theoretical and conceptual framework of factors influencing technology acceptance and adoption. The following Chapter 3 will discuss research methodology pertaining to this study.

CHAPTER 3: METHODOLOGY

3.1 Methodology

In this Chapter, the research methodology is introduced. Research methodology is a systematic way to solve a problem (Pandey and Pandey, 2015) and describes the plan and processes the researcher will follow. It is the science of studying how research is to be carried out (Kothari, 2004). Essentially, the procedures by which researchers go about their work of describing, explaining and predicting phenomena are called research methodology (Prakash, Sasirekha, 2014). It is also defined as the study of methods by which knowledge is gained. Its aim is to give the work plan of research (Rajasekar, Philominathan & Chinnathambi, 2013). A research methodology is a guideline for activities conducted during the research (Sheya, 2014).

A research design is the program and plan that guides the investigator in the process of collecting, analyzing, and interpreting observations (Frankfort-Nachmias & Nachmias, 2008). This research used a mixed method methodology with both quantitative and qualitative measures.

Research Philosophy

A research philosophy is a belief about the way in which data about a phenomenon should be gathered, analysed and used (Blaxter et al., 2006). There are four major research philosophies that have been identified in the Western tradition of science, namely Positivism, Realism, Interpretivism and Pragmatism (Mark Saunders et al, 2003; Creswell (2009).

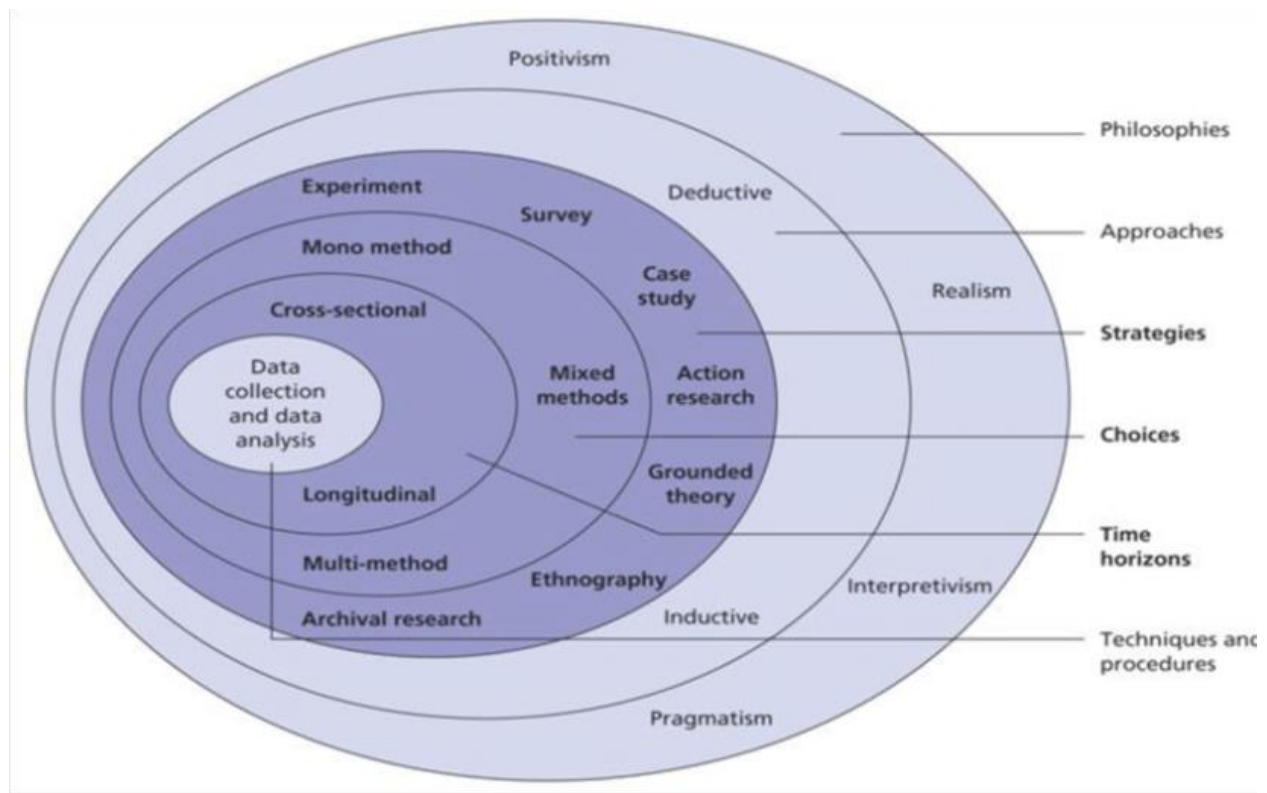


Figure 3.1 Research Onion (Saunders et al, 2009)

Pragmatism uses mixed methods, i.e. both quantitative and qualitative and is often used when researcher is still exploring. This research philosophy admits concepts to be relevant only if they support action. Pragmatism recognizes that there are many ways of interpreting the world and undertaking research, that no single point of view can ever give the entire picture and that there may be multiple realities (Saunders et al, 2009). This philosophy is often used in the Information Systems world where practical solutions are developed.

The Philosophy of Interpretivism works on the principle that nature and society are two different objects (Martin and Guerin, 2006) and there are multiple contrasts of the truth. The researcher is situated within the research and therefore the interpretation of results could be subjective to the context, researcher, or participants, but there are multiple methods and procedures to introduce the necessary research rigor. Interpretivism uses mainly qualitative methods. Positivism deals with highly structured and large samples,

measurement is often quantitative, but can use qualitative measures as well (Saunders et al, 2009). The researcher follows highly structured methodology in order to facilitate the hypothesis (GuhaThakurta, 2015). Positivism considers that only truth exists, and the researcher is objective. The Realism research philosophy relies on the idea of independence of reality from the human mind. Methods chosen must fit the subject matter. Realism is quantitative or qualitative. Realism can further be divided into direct and critical approach (Novikov & Novikov, (2013).

For this research, the Pragmatism philosophy was being followed as it uses both quantitative and qualitative data. The researcher used both qualitative and quantitative methods of data collection techniques which were a survey and interviews to derive the knowledge. A redesign of the eWallet service was proposed.

3.2 Instruments

3.2.1 Semi Structured Questionnaire

A semi-structured questionnaire adapted from the validated questionnaire of TAM was developed by the researcher. The items taken from TAM included items measuring perceived ease of use (PEOU), perceived usefulness (PU), attitude toward using (ATU), and actual system use. The items taken from TAM were on a 7-point Likert style. The items were adapted in a way that it was more fit for the context as in the example displayed below: (See Appendix A for full questionnaire).

- EWallet is very Easy to use *

Mark only one oval.

strongly disagree ☐ ☐ ☐ ☐ ☐ ☐ ☐ strongly agree

- EWallet service is very Easy to locate at the ATM, on the On-line banking (computer), Banking App and Cellphone Banking?

Mark only one oval.

strongly disagree ☐ ☐ ☐ ☐ ☐ ☐ ☐ strongly agree

- What do you mostly use the eWallet system for?

.....

A link containing the survey questionnaire was shared and distributed to the participants. Printed questionnaires were also printed out in hard copy and given to those participants who could not complete it online. Those completed questionnaires were then captured on the online survey to form part of the results for analysis. The semi-structured questionnaire consisted of unstructured and structured questions. The semi-structured questionnaire collected both numerical data and open-ended data. The open-ended questions in the semi-structured questionnaires gave more insights because the participants could give their actual views (Gillham, 2000; Nunan, 1999). The questionnaire contained a demographic section which asked what languages the respondents speak, age and gender; the second part of the questionnaire was related to banking; and the third and last part dealt with questions pertaining to the eWallet service.

The Banking Questions included were: See Appendix A for full questionnaire:

- Do you have an active bank Account?

Mark only one oval.

Yes

No

- Time to get nearest bank (branch)

Mark only one oval.

Less than 10 minutes

Less than 20 minutes

Less than 45 Minutes

More than 1 hour

The semi structured questionnaire was used to gain more insight into how the users feel about the current system and what problems they experience with it, as well as where they want the system to be improved.

According to Seal (2012) some of the advantages of questionnaires are they are less costly to administer. They can cover a large geographical area as compared to face-to-face interviews. Moreover, the absence of the interviewer reduces bias. The identity of the respondents remains anonymous as the respondents are free to complete the questionnaires as compared to face-to-face interviews.

The numerical information collected is interpreted and analyzed using figures, tables, and graphs (Best & Kahn, 2000). The open-ended answers were coded and analyzed thematically (Braun & Clarke, 2006).

3.2.2 Interviews

Seidman (1998:4) states that interviews have proven to be the best method to find out things that cannot be directly observed, and for understanding the meaning people put to their experience. An interview can

be defined as a conversation for gathering information. An interview involves an interviewer, who coordinates the process of the conversation and asks questions, and an interviewee, who responds to those questions (Easwaramoorthy & Zarinpoush, 2006).

The interview questions were formulated by the researcher to answer the research questions. The interview questions were formulated after the survey results were obtained to explore the results in order to get more clarity on particular issues. Once the researcher has formulated the interview questions, they were submitted to the research supervisor for scrutiny. After the questions had been scrutinized and revised, the interview was presented to two persons to test for readability and understanding. The final interview schedules were compiled (see Appendix B).

For this research, interviews were conducted face to face and audio and/or video recorded for those participants who agreed to be video recorded. Participants signed informed consent forms for participation in the interview Process (Appendix E). Field notes were also taken to highlight important points. Following the interview, a transcription of the recordings was done.

Semi-Structured interviews are based on a pre-determined question although a variety of answers may be expected (Blandford, 2013). In this way, the researcher can follow up on interesting topics that may arise during the interview as well as respond to the situation at hand.

Semi-structured interviews were used to gain in-depth understanding of challenges users are experiencing and suggested solutions. Interviews are another widespread way of gathering verbal data and are best suited for understanding people's perceptions and experiences (Blandford, 2013).

The interview questions dealt with system knowledge; how much they know about the current system, if participants have used eWallet before, what they do with the money in their eWallet account, and the proposed changes they wish to see on the system.

3.3 Participants

A snowball sampling technique was used as it operates on the basis that the subpopulation and every population element should be represented, thereby allowing the researcher to get an insight and target as many consumers as possible from a wide range of background, ethnicities and demographic who were using or not using the eWallet Services. The snowball technique minimises sampling bias and at the same time maximises the sample's representativeness (Blumberg et al., 2008).

Snowball sampling technique is a method where existing study subjects recruit further subjects from among their acquaintances. This is a popular approach when sampling from hidden populations (Shafie, 2010).

Snowball sampling or chain-referral-sampling of a hidden population begins with a convenience sample of initial subject, because if a random sample could be drawn, the population would not restrict as hidden, (Etikan, Alkassim, Abubakar, 2016). The researcher distributed the questionnaire with eWallet users and non eWallet users at her convenience and with those she had contact, who then recruited further respondents. These respondents were to distribute the questionnaire with their acquaintance and who will further distribute it with their acquaintance until the researcher has gained the target responses. A link containing the survey questionnaire was shared and distributed with the participants. The survey was initially shared via a WhatsApp message to everybody in the researcher's contacts and groups. These respondents further recruited the others by distributing the link. The questionnaires were also printed out in hard copy and given to those participants who could not complete it online. The completed questionnaires were then captured on the online survey. The questionnaire administration went on for about a month in order to give enough time for the researcher to gain enough responses. The questionnaire also included an informed consent as the participation in the study was voluntary and participants could refuse to participate or withdraw from the survey at any time with no negative

consequences. The Researcher also indicated that there will be no monetary gain from participating in the survey. Permission was granted from the Head of Digital Products at FNB to conduct the survey (See Appendix D).

Regarding recruitment and selection of the interview participants, the interview participants were purposively selected for the interview. These Included both expert and novice users. The participants were contacted and informed about the research, including its aims and objectives as well as expected benefits of the research. After permission was gained from the participants, a date for the interviews was then set up. Informed consent forms were signed, and participants were interviewed individually.

3.4 Data Analysis

Data analysis is central to credible qualitative research (Maguire & Delahunt 2017). In this study the thematic approach to data analysis was used. Thematic analysis is the process of identifying patterns or themes within qualitative data (Braun & Clarke, 2006). These themes or patterns will be used to address the research or say something about an issue (Maguire & Delahunt 2017).

In the context of this study, Braun & Clarke's (2006) 6 step framework of conducting thematic analysis portrayed in Table 1 were used. The initial step involves becoming familiar with the data reading and re-reading the transcripts.

The second step involves generating initial codes from the data. In this stage the researcher will organise the data in a meaningful and systematic way. Coding reduces lots of data into small chunks of meaning. The third step involves searching for themes and patterns within the data. The fourth step involves reviewing and refining the candidate themes. The codes are reviewed and examined and clearly fitted together to form a theme. The fifth step involves defining the themes. (Braun & Clarke, 2006, p.92) refers to this as the 'essence' of what each theme is about. The final step is report write up accompanied by enough data extracted which captures the essence of main points.

Table 3.1: Braun & Clacke’s six phase framework for doing a thematic analysis ((Braun & Clarke, 2006)

Step 1: Become familiar with the data, Step 2: Generate initial codes, Step 3: Search for themes,	Step 4: Review themes, Step 5: Define themes, Step 6: Write-up.
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3.5 Ethical Considerations

Participants were not forced to complete the questionnaires as the researcher respected the right of privacy and choices of participants and explained it as such.

In addition, a letter was written to the Head of Digital products at FNB Namibia requesting permission to conduct survey about the FNB eWallet product as well and permission was granted (See Appendix D). Interviews were done only after informed consent had been given by interviewees.

Participants were informed about the purpose of the study, the anticipated uses of the material gathered and the possible benefit of the investigation. Confidentiality was guaranteed, and participants could withdraw from the research at any stage if they felt uncomfortable.

3.6 Summary

This chapter deals with the research methodology, the procedures and the strategies used in the study. Research design, participants and ethical consideration were discussed, the chapter also discussed the sampling method, as well as gave an explanation as to how data was collected and analyzed. Chapter 4 which follows hereafter presents data and analyses the primary research results.

CHAPTER 4: RESULTS

4.1 Introduction

This chapter presents and describes the research findings based on the analysis of data obtained from participants. The analysis of data followed the sequence of the questionnaire questions as well as the data obtained from the interviews. The analyses of data were accompanied by establishing relationships with existing literature. In this way, the readers are able to understand the factors that are influencing consumer adoption of eWallet in Namibia well as the reasons behind the participants' ideas, opinions and attitudes to use eWallet or not. The core research questions were:

RQ1. How do consumers perceive and use eWallet services?

RQ2. What are the factors influencing adoption of eWallet services?

RQ3. How can the eWallet service be redesigned to increase adoption?

4.2 Presentation of results and analysis of data

This Chapter is divided into two sections; firstly, it presents results on participants' demographic information and the second section focuses on the thematic findings related to the objectives. The data was mainly collected using questionnaires and interviews of which the results are analysed below.

4.3 Participant's demographic information

A total of 130 people participated in the study. Out of the 130 respondents, 18-35-year-old account for 89%, which indicates that the younger generation participated the most. Figure 4.1 reveals the breakdown and most respondents were in the age groups 22-23 (16.2%), 26-27 (16.9%). A breakdown of the results would be; 18-19 (2.3%), 20-21 (2.3%), 22-23 (16.2%), 24-25 (24.6%), 26-27 (16.9%), 28 -29(7.7%), 30-31

(7.7%), 32-33 (2.3%), 34-35 (6.9%), 36-37 (3.1%), 38-39 (1.5%), 40-49 (2.3%), 50-59 (0.8%), 60 and above (5.4%). This participation pattern can be explained by the snowball sampling technique, it could have bias towards a younger age group as participants had to ask acquaintances to participate who might be in the same age group. The age group is also the young professionals who might have finished tertiary education and are establishing themselves in their careers. However, this age-range does not affect the consumer adoption process too much as this is the age group whose computer self-efficacy is highest.

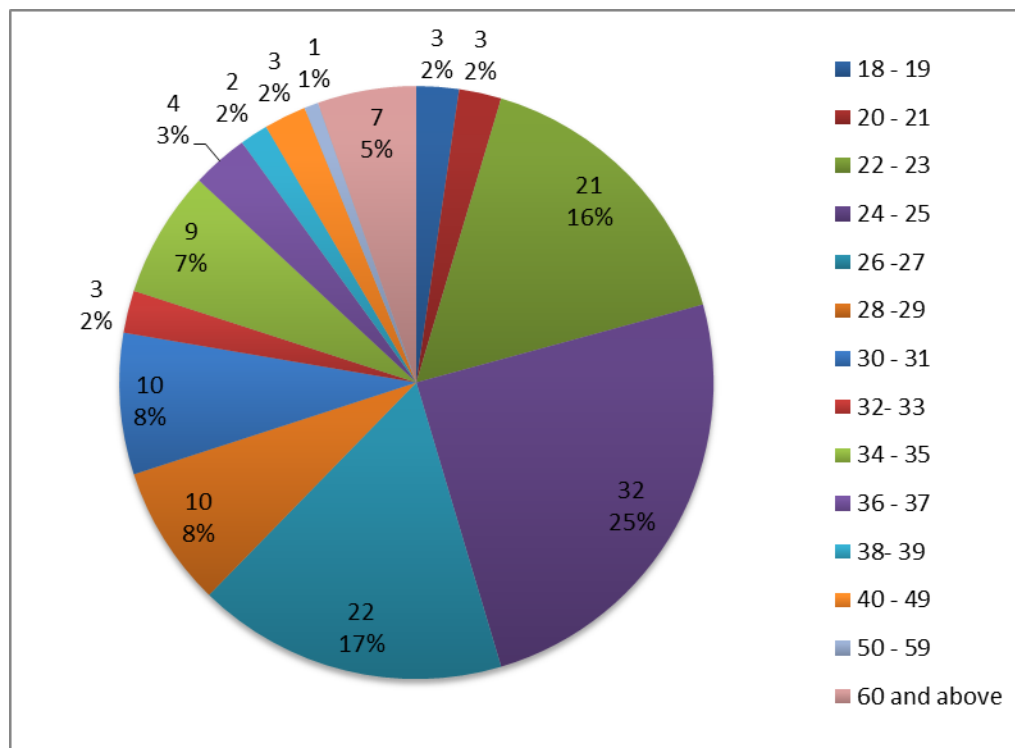


Figure 5: participants age

4.3.1 Type of mobile phone usage

About 96.2% of respondents indicated that they use smartphone as their mobile device and 3.1% respondents use basic phone (non-smartphone) while less than a percentage of respondents (0.8%) do not have a phone. Feature phones have WhatsApp functionality but no internet access. Nevertheless, not possessing a smartphone does not mean that they do not have knowledge about mobile wallet or that

they do not use it since eWallet works on both smart phones, basic phone, and feature phones. As for participants with no mobile phones, there is also a case that they might start to use it in the future. Hence, it is still useful to get information from non-phone users.

4. What type of cellphone do you have?

130 responses

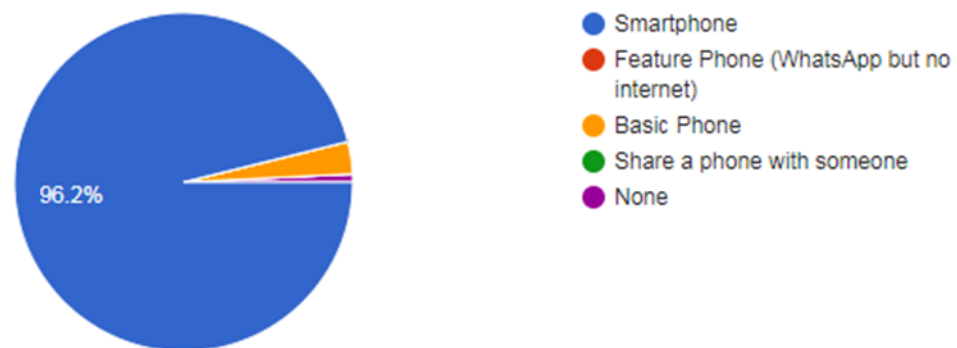


Figure 6: type of cellphone

4.3.2 EWallet Services Awareness

According to Figure 4.3, 95.4% of the participants indicated that they know of the eWallet service, 0.8 % claimed they do not know of the service, whilst 3.8 claimed to have heard about it.

7. Do you know what the eWallet service is?

130 responses

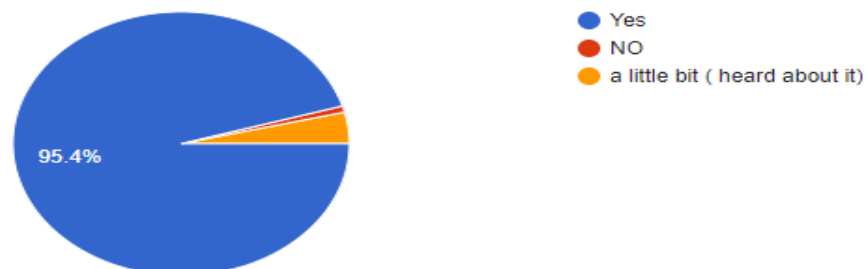


Figure 7: EWallet Awareness

4.3.3 Active Bank Account

Nearly all respondents (97.7%) as per Figure 4.3 had an active bank account. It was necessary to ask this question since the eWallet system was designed in such a way that only those with FNB accounts can make eWallet payments. EWallet does not account for the unbanked as the only way to transfer money to eWallet account is by having someone with an FNB Account send it to the individual who does not need to have an FNB bank account and can withdraw the money from an Automatic Teller Machine (ATM) using a pin generated by the system. An eWallet is not transferable; the receiver cannot send it to another individual. However, if the receiver is an FNB account holder and they have online banking they can transfer the money to their bank account. However, eWallet still acts as a virtual bank account as you can still make payment such as DSTV, purchase prepaid electricity and airtime.

5. Do you have an active bank account?

130 responses

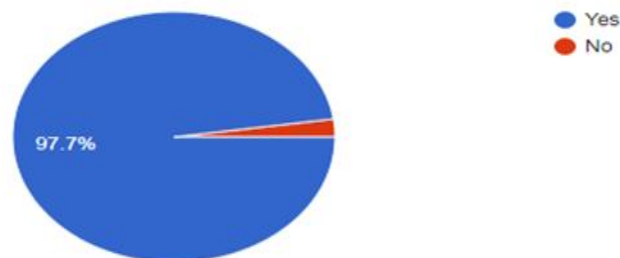


Figure 8:Active bank Accounts

4.3.4 Sending and receiving eWallet

The questionnaire results also indicated that more people have received an eWallet than those who have sent an eWallet payment. This could be due to the fact that more than half of the participants are under the age of 25 years old and therefore they might be students, high school learners or unemployed and therefore they might be receiving money from their parents as means of allowance.

9. Have you ever paid via eWallet(sent payment to someone)?

130 responses

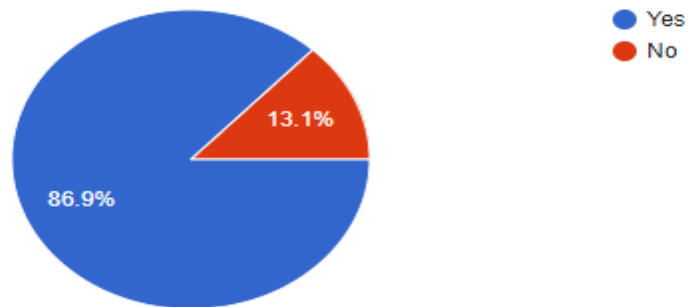


Figure 9:EWallet Payments sent

11. Have you ever received an eWallet Payment?

130 responses

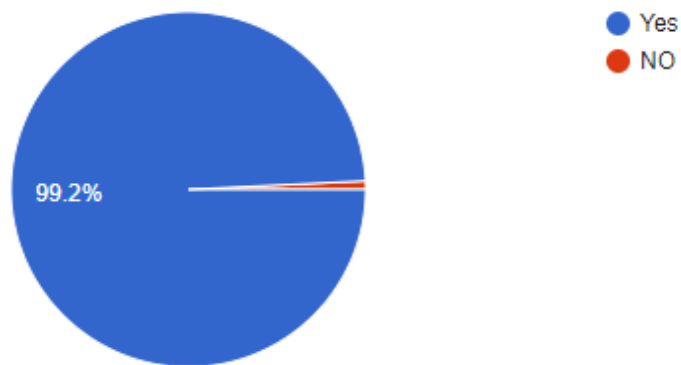


Figure 10: EWallet Payment received

Service Satisfaction

Respondents were asked about their satisfaction level when they use the eWallet system. On a scale of 1 to 7 With 1 being totally agree and 7 being totally disagree.

23. EWallet is very safe to use



130 responses

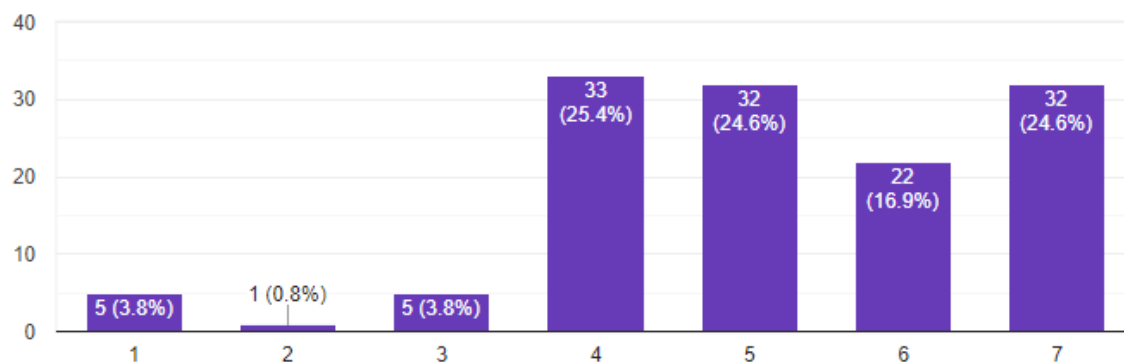


Figure 11: EWallet Safety

The Figure 4.6 shows that 25% felt very strongly that eWallet is safe to use with 67% in agreement with the statement. However, 25% were uncertain about the safety and only 8% felt it was unsafe to use. The percentage of doubters (25%) might be too high if one considers that it is a bank offering the services and one would expect most users of the service to trust it.

24. EWallet is very Easy to use



130 responses

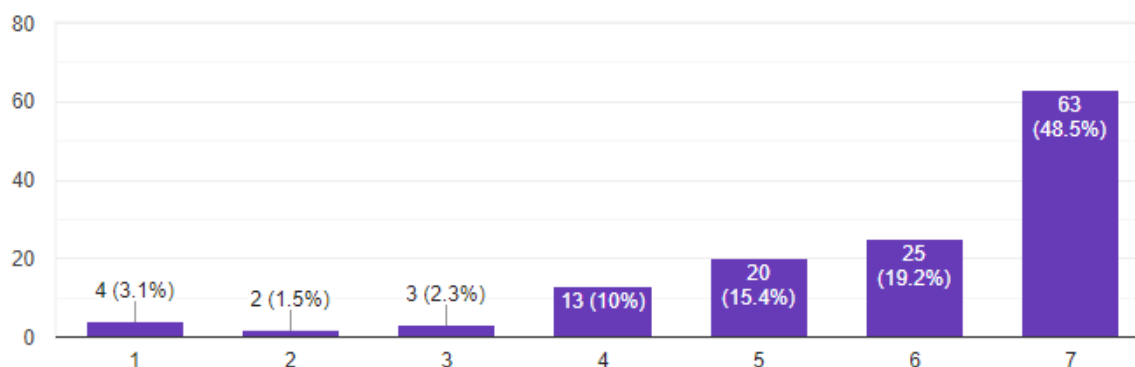


Figure 12:EWallet Ease of use

Figure 4.7 shows the summarized results of answers related to ease of use of mobile banking services. According to the data analysis, 63% agree that eWallet is very easy to use. Whilst 4% have indicated that eWallet is not easy to use.

The statistics show in Figure 4.8 show that 39% strongly agree with 75% on the collapsed agreement scale while 15% were uncertain and 9% disagreed. These statistics indicate that a positive attitude towards eWallet among the respondents.

25. EWallet service is very Easy to locate at the ATM, on the On-line banking (computer), Banking App and Cellphone Banking?

130 responses

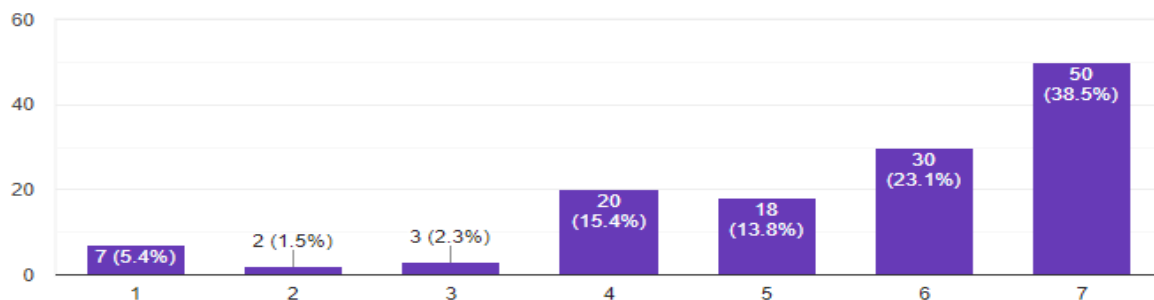


Figure 13: Locating eWallet

4.3.5 Obstacles and challenges

EWallet does not only provide benefits to the consumer in terms of convenience and to the provider in terms of cost reduction and greater reach, but it also provides a relatively secure medium. This also reduces the concerns about risks especially among users. As Figure 4.9 below shows, only 14.6% of respondents experienced security issues.

19. Have you ever experienced any security/risk encounters with/ while using the eWallet service?

130 responses

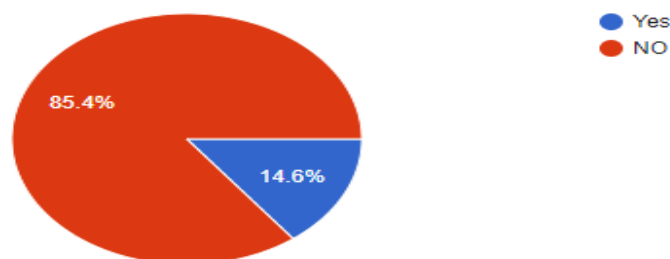


Figure 14: EWallet Security

To support their answers, respondents gave the following feedback:

Feedback from respondents included:

- *I haven't but it's easy to send money to a wrong number.*
- *Risk encountered while just after an SMS of eWallet my son transferred the eWallet and pin number to his cell phone*
- *Pin number is exposed*
- *Personification- I have received calls of people claiming they were from the bank asking me to do dial numbers on my account. Someone also tried to trick me by sending me the similar eWallet SMS with their phone and asked me to send back the money when indeed they never sent the money*
- *Lost phone and money retrieved*

This indicates that consumers are concerned with the security of mobile devices and therefore eWallet pins sent on SMS; bank official impersonation and the ease of making mistakes with the mobile numbers.

In the eWallet disclaimers, the bank does not take responsible for errors with mobile numbers (FNB, 2019).

4.4 Thematic analysis Themes

The researcher analysed and synthesised the data to determine group related themes that affect individuals in the adoption of mobile eWallet. The process followed was the data was analysed for most occurring keywords. These Keywords were coded and grouped according to similarity and thereafter extracted into themes. The researcher initially identified seven key themes: Fees, Security, Challenges, Redesigning the system to improve adoption, Perceived Ease of use, Innovative uses of eWallet. The themes were later collapsed to four themes when researcher iterated over the data and themes.

The themes of 'Perceived ease of use', challenges were merged to form one theme named 'eWallet service not perceived to be user friendly'. This new theme described the negative and the positive experiences and aspects that were identified. The theme 'Innovative uses of eWallet' was reconsidered as with aspects of usages and renamed to 'The ewallet system is convenient'. 'Redesigning the system to improved adoption' was removed as a theme as it was based on the expectations of what the respondents feels the system should be redesigned to and what they expect of the eWallet service. These observations could therefore answer the 3rd research question that deals with how the eWallet service can be redesigned to increase adoption.

The final list of themes that emerged from the analysis process is described in detail in the sub-sections below.:

1. Fees – Users perceive fees to be too high

2. Security – Users are concerned about security
3. EWallet service not perceived to be user friendly
4. EWallet service is convenient

4.4.1 Discussion of Themes

1. Fees - users perceive fees to be too high

Some participants indicated that the eWallet payment fee is relatively high when making a payment. Participants rejected the fees charged for eWallet services. They want to be able to withdraw the whole amount sent to them at no cost. The following views, which were expressed by some of the participants, appeared to question the bank charges.

- *“They are too much...I don't know why they charge for requesting the pin”*
- *“Well first of all FNB and MTC charge you almost every time you need to use eWallet.*
- *“Due to the eWallet fees, I hardly make use of it. I rather use Pay2Cell which is free and goes directly into my account.”*
- *“The fees were more transparent when eWallet services just started now the fees are very unpredictable... It used to be a flat N\$9 regardless of the amount. Now they charge more for higher amounts. And they charge for withdrawal as well.”*
- *“Receiver must not to be charged. Receiver should not be charged. They should get the specific amount the person sent”*
- *“To make it free. FNB recently introduced zero data thing on the mobile app as long as your data is switched on and you are on the MTC network you can do online banking without using your data/airtime. But now if I am not on the smart phone and I am on the feature phone I will still get charged accessing the cellphone banking/eWallet. Accessing*

cellphone banking/eWallet requires me to have airtime on my phone not everyone can afford to have airtime”

- *“Expensive, bank charges and airtime charges”*
- *“They should not charge me when I withdraw the eWallet for the second time because what’s the point? I don’t like it.”*
- *“Too high for us students”*
- *“There is the charge of sending the money which depends on the amount that you are sending. I know for example if you send an amount below 2000 you get charged N\$10. But there is also a fee that is being used when you are accessing the service as for cellphone banking on ussd it is N\$1.00 on your airtime as for the banking app and online banking its charges on your data”*

The comments above indicate that the respondents are concerned about two types of costs which are involved when conducting an eWallet payment as well as receiving an eWallet, i.e. bank charges and airtime or data charges. Data and airtime costs which are charged by the network operators for example when customer access the USSD option to request for a new eWallet pin, view or transact on their eWallet account as well as when they access the eWallet account via the banking App.

However, the respondents’ perception of the fees might not necessarily be true as some services do not incur any transactional/data costs e.g. purchase of airtime as well as using the FNB App when on the MTC network as FNB has had zero rated the mobile App since 2018 Customers who make use of the MTC network ,and use the banking App to make payments do not need to have data on their phones (New Era, 2018).

2. Security - users are concerned about security

Participants were unsure of how secure the eWallet system is. Participants indicated that they were very suspicious of mobile transactions especially pins that are sent to their mobile phones. They felt as if it was very easy for other people to steal their money. Some participants fear being scammed. Some of the comments from the participants are cited below:

"I fear for security reasons. For example, when I send an eWallet to family members in the north. I fear that people do not always have their phone that is why I do not like generating the pin. Because if the phone is with someone that means that they will then have access to that person's eWallet account because they can just go and withdraw all the money. But if it is not with them and I send the eWallet them they will not be able to generate a pin as they do not know their eWallet pin. The fear of the money and the message falling into the wrong hands."

"Security wise, I have bit of concern with information being sent to your phone. Not always, but people around you might want to take your money but it's possible they have your phone somebody sends you something, somebody else sees this notification and then just decides I know your number and they use the pin to withdraw your money. I don't know how they can really go around/control that. I suppose each and every user needs to be alert at all time especially when you know you are going to receive money to make sure that your phone is not with somebody else. Basically, keep your possession to yourself and not share it."

"risk encountered while just after an SMS of eWallet my son transferred the eWallet and pin Some fraudsters would send fake SMS' as if they are from the bank, and then call under the pretense that they wrongly send me money via eWallet (e.g. N\$4000) hence I should refund them the 3000 and keep the rest. Luckily, I have not fallen for these tricks so far, but I know many people who have been defrauded in this manner. Number to his cellphone (2)"

“Impersonation I have received calls of people claiming they were from the bank asking me to do dial numbers on my account. Someone also tried to trick me by sending me the similar eWallet SMS with their phone and asked me to send back the money when indeed they never sent the money”

“Sending money to wrong number and not get a refund”

3. eWallet service not perceived to be user friendly

Participants indicated that eWallet is not user-friendly, and they experience challenges when using the eWallet service. Some of the challenges are not necessarily linked to how eWallet transactions are performed on the system but are linked to the service in terms of how participants receive and withdraw the money sent through the service.

Some of the challenges as indicated by the participants appear below:

“Service freezes and I should restart and get charged another dollar”

“Some fraudsters would send fake SMS’ as if they are from the bank, and then call under the pretense that they wrongly send me money via eWallet (e.g. N\$4000) hence I should refund them the 3000 and keep the rest. Luckily, I have not fell for these tricks so far, but I know many people who have been defrauded in this manner”

“Lost phone and money retrieved”

“Delays in sending and receiving the SMS confirmation/notification for payment made or received”

“My grandmother did not know how to request for a pin as she does not understand English”

"Sometimes when the ATM doesn't have small money, you end up not getting the full money as you withdraw partial and later without the remaining somewhere and by so you are being charged again. If you were to get N\$300, you only end up getting even 390 because the remaining is N\$8/9 which you cannot get from the ATM"

"Pin expires before I get to the nearest ATM and one needs to be literate"

"Don't know how it work"

"I don't know how to eWallet no one show me how to do it"

"Only in English"

Below are the positive comments observed:

"Quick and easy to use"

"It's faster and accessible"

"It is familiar as I have used similar service before"

"It saves time"

"More convenient than travelling to the bank always to carry out a simple transaction"

"easy and fast to get service no more in bank long queues"

"Very convenient, makes banking less of a cumbersome process"

"You can do it in your own comfort zone & money is always secured."

"You can send eWallet any time"

"user friendly"

The absence of adequate automatic teller machines (ATMs) and banks around the country has left respondents without options on many occasions and is a big hindrance for the adoption of the eWallet system. Furthermore, respondents mainly send eWallet to the elderly people who mostly do not have an active bank account and might not speak English. One of the main obstacles is language because even though brochures for the eWallet services are in different languages, the actual transactions on the system are carried out in English. Respondents are also faced with a lot of fraudulent activities when using the system as well as network issues. The First National Bank Forensics team has noted the ‘imposter scam’, where fraudsters pretend to be bank employees trying to coerce clients to execute certain instructions on their cellphones (Donald, 2018). The fraudsters will call the customer requesting them to enter a code on their cellphone for release of funds. This code is normally the cellphone banking string: *140*392# or *140*321# followed by what the fraudster then names as a verification code but is in fact the amount the customer is about to transfer to the fraudster – e.g. 4994 ultimately sending N\$4,994. Customers are urged to be on alert when receiving calls from their banks and to rather practice extra safety precautions, like taking the caller’s details and phoning the bank through the switchboard number to confirm that this is not a scam (Donald, 2018).

However, the eWallet system has simplified the participants experience as the respondents gave positive feedback about the system. The participants pointed out that the eWallet service is also useful in such if it makes the payment process simpler or faster. Some of the security concerns raised pertained to mobile phone use and its risks and while the service cannot account for all these risks, the issues raised provides sufficient input to design improvements for the mobile transactions. As per the results 25% felt very strongly that eWallet is safe to use with 67% in agreement with the statement. However, 25% were uncertain about the safety and only 8% felt it was unsafe to use. The 25% uncertain respondents raise concerns that the redesigned service has to consider implementing more stringent measures to ensure safety and security of transactions.

4. EWallet Service is convenient

Participants have also indicated that the eWallet service has simplified their lives as they no longer have to travel and spend long hours in the bank queues as it is convenient and readily available and can be done anywhere.

Participants have indicated ways in which eWallet has proven to be convenient:

“Sending/ receiving money”

“Get allowance”

“Send money to friends and family”

“Helping people and paying for my services.”

“Buying prepaid services such as airtime and electricity.”

“Send money to family, friends, and to pay for goods and services from people like street vendors, plumbers, electricians etc.”

“Business Transaction”

“Pay rent”

“Family contributions”

Despite the negative aspects of not catering for the unbanked sector without ATM in certain rural areas, the eWallet system is perceived to be convenient and a solution to those without bank accounts or simply a faster way of money transfer.

4.5 Summary of the Chapter

This chapter presented data and analyses the primary research results which was mainly collected using questionnaires and interviews of which the results are analyzed and presented using graphs and pie charts. Key themes derived are also described in this chapter. The key themes that emerged were Fees – users perceive fees to be too high, Security – users are concerned about security, eWallet service not perceived to be user friendly, eWallet service is convenient. The next Chapter discusses the results in more detail.

Chapter 5: Findings and Recommendations

5.1 Discussion

In this Chapter, the researcher ought to look back and take a broad overview of the whole research process. The main research findings with respect to the research questions are summarized and discussed. The general conclusions based on the research findings are also presented and juxtaposed with the existing literature and the research methodology as discussed in the preceding chapters. The core objective of this research was to investigate the factors that are influencing consumer adoption of eWallet in Namibia and provide insights on how to redesign the eWallet service in Namibia for increased adoption. Furthermore, the research investigated how consumers perceived and used eWallet services.

The research data indicated that the usage of mobile banking has seen an explosive growth in Namibia in recent years, especially among young people. This research results show that about 80% of the respondents use mobile or cellphone banking to make transactions. Some of the benefits of using eWallet as indicated by the participants include sending and receiving money, paying for services, family contributions, buying prepaid products, and sending money to those without bank accounts.

This research further examined consumer adoption towards eWallet services. The findings of the research have identified factors such as effective communication, system availability and reliability, transaction speed, usefulness, cost, system response, security and trust, convenience, and accuracy of transaction

This research also attempted to redesign the service and find solutions for some of these factors, so that consumer's adoption will increase.

It is important however, to note that the use and adoption of eWallet services is not immune to criticism. As no eWallet service is risk-free. Although most security concerns occurred due to technical issues, some happened because of the inherent risks of mobile phones and use, and individual's own negligence and carelessness i.e. some of the security issues experienced by the participants were due to the fact that participants entered the wrong information and ended up losing money in the process. Some of the security cannot be mitigated, for instance we cannot mitigate the fact that customer's phone will get stolen but However, as per Nielsen's ten usability heuristics (Nielsen, 1994) forgiveness for user errors is one of the ten heuristics and a necessity. This means that the eWallet service should make provision for such forgiveness such as implementing a recall function of the erroneous transaction. The cognitive load on the user to remember and input the mobile number also deserves attention and redesign. For example, a user should be able to copy and paste the mobile number into the text field. A simple action such as re-verify the mobile number can be implemented. A form of pre-authorization of transactions could be used and the user could be given a period of time to recall the transaction should a mistake have been made. This would imply that communication to the users on both ends needs to be very clear and precise to indicate that a transaction can be rolled back for only a certain period of time and especially where it was not withdrawn yet.

From the researchers' findings the following research questions are addressed:

- **How do consumers perceive and use eWallet services?**

eWallet service providers need to have a clear understanding of consumer attitudes towards their service. By identifying this, it will provide them with better information to direct future planning for enhancement in the service (Doan, 2014). This research revealed that sample were aware of the eWallet service; 95.4% of the participants were aware and know of the eWallet service, but this also indicated sample bias as only those participants who were aware of eWallet services completed the survey. Furthermore, given the lack of random sampling, one of the limitations of the snowball sampling technique is sample bias as specific persons who are friends of friends are targeted (Etikan, Alkassim & Abubakar, 2016). Findings also indicate that 13.8% of the participants have used the service for less than a year, 17.7% have used it for 1 to 2 years, 43.1% have used it for three to four years, and 18.5% have used it for five to six years while 6.9 percent have used it for more than 7 years. Participants indicated that Sending money is the number one use of eWallet, followed by buying prepaid services such as electricity and airtime; and thirdly receiving payments, i.e. when receiving allowance, pocket money, quick job fixes, paying for school fees, shopping, partying, and funeral arrangements.

- **What are the factors influencing adoption of eWallet services?**

There are quite a significant number of factors that could influence the adoption of eWallet services. However, the factors that have been frequently appearing in the results are effective communication, system availability and reliability, transaction speed, usefulness, cost, system response, security and trust, convenience, and accuracy of transaction. The results analyses indicate that eWallet is viewed as an easy way of banking that includes the unbanked sector. Ease of use is also viewed as key towards service delivery and therefore customer adoption.

- **How can the eWallet service be redesigned to increase adoption?**

At times consumers do not receive the service they expect to get from the service providers. Although the eWallet redesign will vary depending on the different needs of each consumer, research findings indicate that participants still need certain areas to be improved. For the bank to improve on the current eWallet services they provide to the consumers, they should first find out what the expectations of consumers are and whether they are satisfied with the current services provided by the bank. These concerns and suggestions from consumers should be taken into consideration in designing an improved service and user experience.

Based on the research results, the system can to be redesigned in the following ways:

- Effective communication (language, explanations, training, information availability, and marketing. Some users require training to use the system, as some partisans indicated that they do not use the service because they never received training and therefore do not have enough knowledge on how the system works. The system should be intuitive to use with step-by-step instructions both on the interface before and during the transaction as well as a guide that can be downloaded for study before use. The issue of language is also very important as many unbanked sectors might include illiterate or those unable to speak English. Therefore, the system should use simple language and also explore implementing possibilities of a toggling function to switch the language for transactions. Furthermore, the system and service could be redesigned in different local languages to cater for those users who do not read English. The system should be able to show feedback to the users both in terms of showing system status as users perceive the system to have frozen if waiting for too long, and in terms of displaying just-in-time information of the transaction like fees charged. Users indicate that they want to see when the eWallet was sent and fees charged on the transaction to be displayed beforehand.

- Fees reduction – Fees should be reduced. Respondents indicated that they were not happy with the fees. They indicated that the fees were too high, and this is further complicated by charging both sender and receiver fees. Users find that using the system to make small payments is not worth it, therefore the system is used less.
- Security on the System- respondents indicated that there is a need for increasing the security on the system by including a two-time pin notification. The recipient will receive the eWallet notification but for added security, the PIN will be sent to the issuer who will forward it to the recipient. Users should also be able to recall erroneous transactions as the usable heuristic of forgiveness requires designers to implement functionality that allow users to recover from errors even if it is user errors (Nielsen, 1994).
- Withdraw money from merchants in rural areas- Respondents indicated that they also want to be able to withdraw money from various merchants such as shops as there is a lack of infrastructure in the rural areas. Furthermore, it also requires more time to get to the nearest ATMs and this is also another cost on the participant.

Below is an extract of the participant's viewpoints:

Participants have indicated the changes they want on the eWallet service

"To Withdraw at the shops but with eWallet at the shop. Banks are far in rural areas"

"The bank should show us how to do it"

"Allow us to request for a pin and access eWallet services while we don't have airtime."

"Their SMS line is just too slow. People don't receive their notification messages at all or very late"

"To be able to send money on my eWallet to someone else"

"Increase the maximum amount that can be withdrawn at a time to \$5000 because to withdraw 5000 I will need three pins this is way costly as one pin can only withdraw maximum 200"

“I should be able to withdraw N\$10.00”

“we want fees of what we are sending to be displayed before we can send”

However, respondents have also noted the usefulness and advantages of the eWallet service. With that being said, the eWallet service provider should therefore implement a policy aimed at increasing the usefulness perceived by the consumer and/or reducing the costs they incur. Participants indicated that only the sender must pay for the service and the receiver should not be charged a further indication also stated that participants want fees incurred on both sides to be indicated especially with the sender when making the payment.

The basic level of knowledge required by participants to use the service should be defined therefore training curricula in indigenous languages should be developed to meet this need as well as accommodate those participants who do not read English. The service interface's language also needs to be simple and intuitive and can use alternative or supplementary functions such as hover explanations in different languages or the interface could be in different languages. This can also be implemented at the ATMs when withdrawing money to allow for customers to be able to choose different languages.

5.2 Research Recommendations

EWallet is rather a new topic in this technology era and is an area that has limited research in the Namibian sector, therefore, the points of view of the sample group might be limited. This research focused mainly on consumer's adoption of mobile wallet, yet in fact, in order to make mobile wallet widely accepted, it requires much effort in terms of change from many related stakeholders i.e. network providers, especially the merchants who operate in rural areas where there are no ATMS.

Security- EWallet services need to gain trust from users. Ensuring security and therefore gaining trust should be a priority for the service provider. Implementing the forgiveness principle to by allowing user to be able to recall function of the erroneous transaction as well as the two – time pin notification.

Peer-to-peer possibilities- Users want to be able to send money from one eWallet account to another eWallet account. This is especially beneficial to those without bank accounts. The current system does not allow users to send funds from one eWallet account to another. It only allows those users with internet banking to transfer money from one eWallet account to a bank account, but this is only beneficial to those users with bank account and internet banking.

Training – Users need to be provided with training on how to use the eWallet service. Pamphlets on how to use the service need to be translated in local languages. Training can be offered in various ways for example on the interface itself where you have a manual or information bubbles or hover text, then there could be an assist button or chatbox where the user can chat and be guided through the transaction. As well as through pamphlets in different local languages.

Fees - Users have indicated fees to be one of the major draw backs of the service. EWallet currently has a double payment method whereby both sender and receiver are charged. These fees include sender payments, this is the amount the sender is charged when issuing an eWallet as well as when accessing the service. Receiver payment includes the amount the receiver is charged in order to redeem or use the eWallet. The receiver is charged when requesting for a pin as well as when accessing the service to make transactions such as payment or purchases.

Visual feedbacks in case of system delays -respondents have been experiencing system delays were the service is unavailable for a while. Sometimes they do not receive the SMS in time. Users have indicated that they need the system to provide them with feedback in cases of system delays and when service is unavailable.

Withdrawing money from merchants in rural areas- Participants indicated that they want to be able to withdraw eWallet from the nearest shops as banks are far in rural areas.

5.3 Conclusions

EWallet can be an alternative mode of payment mode and can substitute the traditional way of banking. The sample's users indicated that they are satisfied on its usage. Security and safety of funds play a challenging factor for the users. EWallet service providers should have a clear understanding of consumer attitudes towards the service to provide better information to direct future planning for enhancement need to improve the service. Future studies can be conducted to explore all the stakeholders involved to make mobile wallet widely accepted.

The users are using the system because it is convenient, the convenience factor outweighs the facts that it is not user friendly. Therefore, respondents indicated that they make use of other types of methods to overcome their obstacles. For instance, asking those who are literate to help them with the service, because of the need to use the service. The conclusion is that the service is useful, but the service needs to be redesigned based on the outcomes as indicated by the participants and summarized in this thesis.

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APPENDIX

APPENDIX A: QUESTIONNAIRE

Masters Research project

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Supervisor: Dr. Anicia Peters

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My name is Maria Sheya and this questionnaire is created as part of the Master's degree in Informatics majoring in Business Informatics, Namibia University of Science and Technology. The main aim of the survey is to collect data and information about how consumers perceive and use eWallet services, to examine factors influencing consumer adoption of eWallet services.

I would like to thank you for your contribution to my thesis by answering this survey. All information submitted as part of this survey will be treated as confidential and anonymous.

Your participation in this study is voluntary, you may refuse to participate or withdraw from the project at any time with no negative consequences. There will be no monetary gain from participating in this survey.

If you have any questions or concerns about completing the questionnaire or about participating in this study, you may contact me or my supervisors at the emails listed above.

If you agree/ consent to this questionnaire please continue to answer the questions below, else please exit the questionnaire.

1. What is your gender?

Mark only one oval.

Female

Male

2. Age *

Mark only one oval.

18 - 25

26 - 30

31 - 35

36 - 40

41 - 45

45 - 50

50 - 55

Above 60

3. What language do you speak?

Check all that apply

English

Oshiwambo

Afrikaans

Herero

Kavango

Damara/Nama

Lozi

San

German

Other

4. What type of cellphone do you have?

Mark only one oval.

Smartphone

Feature Phone (WhatsApp but no internet)

Basic Phone

Share a phone with someone

None

5. Do you have an active bank Account?

Mark only one oval.

Yes

No

6. Time to get nearest bank (branch)

Mark only one oval.

Less than 10 minutes

Less than 20 minutes

Less than 45 Minutes

More than 1 hour

7. Do you know what the eWallet payment is?

Mark only one oval.

Yes

No

8. What other Mobile/ Payment Services do you use/ know of?

Check all that apply.

Easy Wallet

Blue Wallet

Pay Today

Mobi Pay

Mtc money

Other (please specify)

9. Have you ever paid via eWallet (sent payment to someone)?

Mark only one oval.

Yes

No

10. How long have you been using the eWallet services?

Mark only one oval.

7 years

5-6 Years

3-4 Years

1-2 years

Less than a year?

11. Have you ever received an eWallet?

Mark only one oval.

Yes

No

12. How do you receive your eWallet payments?

Check all that apply.

ATM

On-line banking (computer)

Banking App

Cellphone Banking

13. How do you make your eWallet payments?

Check all that apply.

ATM

On-line banking (computer)

Banking App

Cellphone Banking

14. Which one do you use the most?

Mark only one oval.

ATM

On-line banking (computer)

Banking App

Cellphone Banking

15. Which one do you prefer the Most

Mark only one oval.

ATM

On-line banking (computer)

Banking App

Cellphone Banking

16. Why?

.....

.....

17. How often do you use the eWallet service?

Mark only one oval.

Daily

Weekly

Monthly

Daily

Occasionally

None

18. If you have not used the eWallet system. Why?

Check all that apply.

Safety

No Access

No use/Need

Don't know how it works

Other reason (Please specify)

.....

.....

19. Have you ever experienced any security/risk encounters with/ while using the eWallet service?

Yes

No

20. If Yes, Name security/risk encounters with/ while using the eWallet service below?

.....

.....

21. What do you mostly use the eWallet for?

.....

.....

22. What Amounts do you transfer the most? i.e. N\$500.00

.....

.....

23. EWallet is safe to use?

Mark only one oval.

Very safe to use

strongly disagree ☐ ☐ ☐ ☐ ☐ ☐ ☐ strongly agree

24. EWallet is very Easy to use *

Mark only one oval.

Very easy to use

strongly disagree ☐ ☐ ☐ ☐ ☐ ☐ ☐ strongly agree

26. EWallet service is very Easy to locate at the ATM, on the On-line banking (computer), Banking App and Cellphone Banking?

Mark only one oval.

Very easy to locate

strongly disagree ☐ ☐ ☐ ☐ ☐ ☐ ☐ strongly agree

27. Do you know how much the eWallet fees are?

Mark only one oval.

Yes

No

28. What do you think are the eWallet fees?

.....

.....

29. What are your thoughts about the fees?

.....

.....

30. Did you encounter any problems while using the eWallet services? Please list problems below

.....

.....

31. Any Improvements you want on the eWallet Services?

.....

.....

32. List the most positive aspect of the eWallet service

.....

.....

33. List the most negative aspect of the eWallet Service

.....

.....

34. Any other comments?

.....

.....

APPENDIX B: INTERVIEW QUESTIONS

My name is Maria Sheya, and this is my research supervisor Dr Anicia Peters

I would like to thank you for agreeing to contribute to this project by being part of this interview. This interview is created as part of the master's degree in Informatics majoring in Business Informatics, Namibia University of Science and Technology. The main aim of the interview is to collect data and information about how consumers perceive and use eWallet services, to examine factors influencing consumer adoption of eWallet services.

*I will take you through the consent form before the interview. (Read consent form to the interview participant)

Have participant Read and sign the consent form*

Interview Questions (Receiver)

1. Have you ever received an eWallet?
2. How do you receive an eWallet?
3. Describe the process of receiving an eWallet?
4. When you receive an eWallet do you always receive a pin?
5. How do you recover an eWallet SMS (is deleted by mistake/ or you have not received a pin/ pin expired)?
6. How long do you think it takes for the pin to expire?
7. If you could choose the time frame for when the eWallet pin expire how long would you wait it to be? (in hours)
8. When you receive an eWallet do you always withdraw all the money?
9. How long do you think the money stays in your eWallet account?
10. What do you usually do with the money in your eWallet account?

11. How much do you think is the eWallet payment?
12. If you could change anything on the eWallet; receiving or sending? What would it be?

Interview Questions (Sender)

1. Have you ever sent an eWallet
2. How do you send an eWallet?
3. Describe the process of sending an eWallet?
4. What do you think happens when the user receives an eWallet?
5. When you send an eWallet do you always choose the option to send pin to the eWallet recipient?
6. How long do you think it takes for the pin to expire?
7. If you could choose the time frame for when the eWallet pin expire how long would you want it to be? (in hours)
8. How long do you think the money stays in the eWallet account?
9. How much do you think is the eWallet payment?
10. Would you want to view the fees before sending an eWallet?
11. If you could change anything on the eWallet; receiving or sending? What would it be?

APPENDIX C: REQUEST TO CONDUCT SURVEY LETTER



**NAMIBIA UNIVERSITY
OF SCIENCE AND TECHNOLOGY**
Faculty of Computing and Informatics
Office of the Dean

13 Storch Street
Private Bag 13388
Windhoek
NAMIBIA
T: +264 61 207 2258
F: +264 61 207 9722
E: foi@nust.na
W: www.nust.na

17 July 2018

First National Bank, Namibia
Head: Digital Products
For Attention: Desery Van Wyk

Dear Mrs Desery Van Wyk

REQUEST FOR PERMISSION TO CONDUCT SURVEY ON FNB EWALLET SYSTEM

Maria Sheya is a registered Master of Informatics student at the Namibia University of Science and Technology under my supervision. She specialises in Business Informatics and Human Computer Interaction. As part of the study programme, she is required to carry out an academic research and her research topic is "Factors influencing the Adoption and Redesign of E-Wallet Services in Namibia. The main aim of this research is to investigate the factors that are influencing consumer adoption of e-Wallet in Namibia and provide insights on how to redesign the e-Wallet service in Namibia.

I would therefore like to ask for permission for Maria to conduct a survey among FNB e-wallet consumers and Helpdesk Consultants. Participation in this survey is entirely voluntary and there are no known or anticipated risks to participate in this research study. All information provided will be kept in utmost confidentiality and aggregate data without any participant names will be used for academic purpose. Once data has been analysed, you will receive a copy of the Executive Summary and if you would be interested in the greater details, an electronic copy (e.g. PDF) or bound copy of the entire thesis will be made available to the Bank/Department.

Maria has provided you with a copy of her proposal summary for possible scrutiny. If you require any further information, please do not hesitate to contact her on 0856861097, sheyamaria@gmail.com or myself directly.

Thank you for your time and consideration in this matter.

Yours sincerely

Dr Anicia Peters
Executive Dean
Faculty of Computing and Informatics
Tel: +264 61 2072722
Email: apeters@nust.na

APPENDIX D: Consent Email

From: Van Wyk, Desery
Sent: Tuesday, August 07, 2018 9:49 AM
To: Sheya, Maria
Subject: RE: Request to conduct survey

Hi Maria

I hereby approve that you conduct the research as long as you do not use an extract of FNB clients base but instead use the survey approach via Questionnaire as indicated during our discussion.

Good luck with the studies.

Kind Regards



Desery Van Wyk | Head Digital Products | Digital Banking | FNB Namibia Holdings Ltd.
3rd floor, @Parkside, 130 Independence Ave, Windhoek, Namibia |
Tel: (+264 61) 299 7162 |

Download the
FNB Banking App today.



Appendix E: INTERVIEW CONSENT FORMS

Informed Consent Form for Research on eWallet Systems

I am Maria Sheya, a Master of Informatics student in the Faculty of Computing and Informatics at the Namibia University of Science and Technology. My research is about the adoption of eWallet in Namibia.

I am requesting your informed consent for the following:

1. That you agree to participate willingly in the interview about the eWallet system. You do not need to be a current user of the eWallet system. You will not be compensated for participation in this interview.
2. There are no wrong or right answers as we are asking for your opinion.
3. We will not refer to you as an individual or by name in our reports and research publications as we will assign a pseudonym or a number to you. We will also not report on individual results but on aggregate results.
4. Should you feel uncomfortable with any question, you may skip the question.
5. We would like to record the interview for transcription purposes. These recordings will not be released or seen by one other than the research team members. Please indicate whether we can video record you ☐ or audio record ☐ you.
6. We would also like to take photos. Any participant faces appearing on the photos will be blurred prior to use in reports or research publications. Do you agree ☐ or ☐ not agree that we can take photos during the interview?

.....

.....

.....

Name (print)

Signature

Date

Contact details of researchers:

Student: Maria Sheya, Cell: 081-4244747, Email: sheyamaria@gmail.com

Supervisor: Dr Anicia Peters, Tel: 061-2072722, Email: apeters@nust.na