

**ASSESSMENT OF CUSTOMER SATISFACTION WITH MOBILE-BASED
UTILITY BILL PAYMENT SYSTEMS IN MALAWI: THE CASE OF
BLANTYRE**

MASTER OF SCIENCE IN INFORMATICS THESIS

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**UNIVERSITY OF MALAWI
CHANCELLOR COLLEGE**

JANUARY, 2018

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MASTER OF SCIENCE IN INFORMATICS THESIS

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Submitted to the Department of Computer Science, Faculty of Science, in partial
fulfilment of the requirements for the degree of Master of Science (Informatics)

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January, 2018

DECLARATION

I, Alima Mlomba Jika, declare that this thesis titled: “Assessment of customer satisfaction with mobile-based utility bill payment systems in Malawi” is my own original work and that it has not been presented and submitted to any other academic institution for a similar or any other degree award. Acknowledgement has been made where people’s work has been used.

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CERTIFICATE OF APPROVAL

The undersigned certify that they have read and approved that this thesis is the student's own work and effort. The thesis has been submitted with their approval.

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DEDICATION

Firstly, to God for His mighty works.

Then to my husband, Gabriel; our sons, Jaden and Juan; my mum and dad, Jane and Ben
Mlomba; and my brothers and sister.

ACKNOWLEDGEMENTS

To God be the glory for fulfilling His promises in my life.

Firstly, I would like to thank Dr. Chipso Kanjo and Mr. Brown Msiska for supervising and intellectually questioning my work tirelessly. Their guidance and contribution towards my thesis writing helped me to reach my goal.

Secondly, I would like to thank my husband Gabriel for the support, personal encouragement and sacrifices he made during the entire study. To my beloved sons, Jaden and Juan, thank you for being there for me even when the journey was getting tougher and tougher. I would like to also thank my dear parents and relatives for their selfless spirit, allowing and encouraging me to do this work. Thank you for the trust you have in me.

Lastly, I would like to acknowledge the following for their industrious support on this paper: Mrs. Auxillia Kaunda, Mr. Peter Banda, Mr Kingsley Jika ,Mr. Patrick Chikumba and Miss Gloria Chisakasa.

ABSTRACT

The ubiquity and convenience of the mobile phone have brought new opportunities in the delivery of financial services. One such opportunity is mobile payment for utility bills. Mobile payment allows customers to perform bill payment transactions through their mobile devices. This study aimed at evaluating customers' satisfaction with mobile utility bill payment transactions. The study followed a qualitative research method in which people registered to mobile money were interviewed using snowballing sampling techniques. Data collected was inductively and deductively analysed using the framework analysis technique. The study has shown that most customers registered to mobile money prefer use of mobile utility bill payment to cash-based payment. Additionally, the study has revealed that of the two mobile payment platforms—mobile network-based and bank-based—customers tend to prefer use of bank-based mobile payment platform. The results also show that generally, customers who use mobile payment are satisfied. However, it was also revealed that system, service and information quality of the mobile payment platform affects the level of satisfaction in a customer. The study recommends interoperability of mobile payment systems from all the stakeholders involved, introduction of network backup infrastructure, provision of means of allowing customers to report their queries, and generating of payment receipt.

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LIST OF ABBREVIATIONS AND ACRONYMS

ATM	Automated Teller Machine
BWB	Blantyre Water Board
DSTv	Digital Satellite Television
E-commerce	Electronic Commerce
EDM	Expectancy Disconfirmation Model
ESCOM	Electricity Supply Commission of Malawi
EU	European Union
FDH	First Discount House
FMB	First Merchant Bank
ICT	Information Communication and Technology
IS	Information Systems
IT	Information Technology
LWB	Lilongwe Water Board
MTN	Mobile Telecommunication Company
NB	National Bank of Malawi
NBM	National Bank of Malawi
NBS	New Building Society
NECTA	National Examinations Council of Tanzania
NPS	National Payment System
PC	personal computer

PIN	Personal Identification Number
POS	Point of Sale
RBM	Reserve Bank of Malawi
RMB	Reserve Bank of Malawi
SMS	Short Message Service
SRWB	Southern Region Water Board
TNM	Telekom Networks Malawi
UNCDF	United Nations Capital Development Fund
USSD	Unstructured Supplementary Service Data
UTL	Uganda Telecom Limited
ZAP	Zain Access Point

CHAPTER 1

INTRODUCTION

1.1 Introduction

This chapter presents a general introduction to this study. The areas presented include the study background which comprises mobile payment, the context, and customer satisfaction in using mobile payment; research problem; research questions and objectives; and motivation of the study.

1.2 Background

Advances in Information and Communications Technology (ICT) coupled with the convergence of telecommunications, broadcasting and computer technologies have resulted in new products and services as well as new ways of doing business (Wirtz & Nikolai, 2003). The finance sector has been one of the beneficiaries of these advances in ICT. In particular, the emergence of the Internet, and the fast growth of wireless telecommunication between organisations and individuals has had great impact on financial systems, resulting in increased use of electronic financial services both locally and globally (Schneider, 2011). Advances in ICT such as: new electronic finance products and services have been introduced with the aim of cutting labor cost whilst improving their value.

Electronic Payment (E-payment) is one of the services that have been introduced as a result of advances in ICT. E-payment is a way of making financial transactions or paying for goods and services through an electronic medium without the use of cheque or cash (Agimo, 2004). Many e-payment systems have come into existence in recent years, and they include credit cards, debit cards, and electronic funds transfer (Abor, 2004).

Another notable advance in ICT is the mobile technology that has brought about mobile phones. The ubiquity and convenience of the mobile phone have brought new opportunities in the delivery of financial services and given rise to mobile payment as a new form of e-payment (Jerkins, 2008). With mobile payment, the customer uses a mobile device, most often a mobile phone, for initiation, authorisation, or completion of payment (Pousttchi, 2008).

The ability that mobile phones have to provide services to the rural and even hard to reach areas provides an opportunity for institutions in both public and private sector to extend their services into such communities. Such potential to extend financial services into marginalised communities has led to the introduction of mobile payment systems in Malawi and other developing countries. Currently, mobile payment is one of the fastest growing forms of e-payment in Sub-Saharan Africa with a growth rate of 3.8 % as compared to 1.1 % growth rate for online financial transactions (NPS Report, 2015).

1.2.1 Mobile Money in Malawi

The mobile money sector in Malawi is relatively new and it was launched in 2008 (NPS, 2012). By 2014, 16.6% of the total population were registered to mobile money, and a majority of 27 % of the registered users were in urban areas compared to 6.9% in rural areas (NSO, 2014). Mobile money use platforms to execute financial services that include domestic remittance. The first mobile payment platform was introduced in 2008 by the National Bank of Malawi. Between April 2008 and March 2009, the Reserve Bank of Malawi (RBM) embarked on a project aimed at strengthening and enhancing payment systems under the National Payment System (NPS) (RBM, 2012). Adopting mobile payment system was one of the strategies that emerged from this project. In response to this, National Bank of Malawi, one of the leading commercial banks, launched a mobile payment voucher system called Mo626ice (NBM, 2016). This was followed by Airtel Money (or ZAP) in February 2012 and later, TNM Mpamba was launched in May 2013 (UNCDF, 2013). This was followed by the launch of other mobile payment platforms by other commercial banks.

Mo626ice is the most widely used service (NSO, 2014). Mo626ice services can be accessed from any mobile phone network in the world as long as the mobile number is registered in the bank's system. The services offered include, accessing account balance and mini-statement, funds transfer to any bank account, airtime top up, utility bill payments, ordering cheque book, issuing stop payment instructions, receiving alerts and cheque confirmations above set limits and DSTV subscriptions(NBM, 2016).

Mpamba (TNM Mobile Money) is a service in which registered customers are able to use their mobile devices to access various financial services. Both customers with bank accounts (banked) and without bank accounts (unbanked) can use the service and, among others, can receive notifications on deposits of their salaries/wages, receive or send funds, cash-out and cash-in money, purchase items, pay bills through their mobile money account (TNM, 2013). Airtel money offers similar services as Mpamba. These services were introduced to enable customers whether banked or unbanked to access various financial services that include airtime top up, paying of utility bills and receiving money anywhere in Malawi (Airtel, 2012).

Airtel Money, TNM Mpamba and Mo626ice in Malawi offer mobile utility bill payments on behalf of major utility providers such as Electricity Supply Corporation of Malawi (ESCOM), Blantyre Water Board (BWB), Southern Region Water Board (SRWB), Lilongwe Water Board (LWB) and Multi Choice-Malawi, a digital satellite television service provider. Prior to the introduction of mobile utility bill payments, customers had to pay their bills at utility providers' pay points. Customers had to travel and queue at these pay points to pay their bills. There were usually long queues at the pay points, and customers could wait for hours to make payment. Mobile utility bill payments were therefore introduced with the hope of reducing the congestion.

The introduction of the mobile payment platforms has given rise to a number of mobile-based financial applications, including mobile shopping, mobile banking, mobile ticketing, mobile entertainment and mobile bill payment. In Kenya, for example,

customers pay for their bills and receive SMS alerts before their electricity is disconnected; all this is done through mobile payment services (Njoroge, 2011).

According to Ikeda (2014) mobile utility bill payment is a key tool in helping utility providers reduce costs and manage billing more effectively. Further, it helps providers extend services to hard to reach areas (ibid). For mobile service providers and other mobile payment platform operators, mobile utility bill payment gives them access to a large base of established utility customers that could help drive widespread adoption of mobile money (Ikeda, 2014).

Similar applications have been launched on various mobile payment platforms where mobile utility bill payments present a new approach to improve financial performance for utility providers, offering time and cost savings to utility customers, and increasing customer loyalty for mobile network operators (Hope et al, 2011). In Malawi Zoon is an example of other mobile payment applications. Zoon is a mobile money platform that provide financial transactions through registered agents. Zoon end users can send and receive money, execute bulk and bill payments and save money through registered agents (GSMA, 2014).

The focus of this study is to assess customer satisfaction with mobile-based utility bill payment systems in Malawi with a special focus on Mo626ice, Mpamba and Airtel Money.

1.3 Problem Statement

Although the introduction of mobile utility bill payment in Malawi was supposed to reduce the queues at pay points, the reality on the ground has tended to be the opposite. A random survey of different pay points confirmed that congestion still persists, entailing that many people still prefer patronising brick-and-mortar pay points. Figure 1 shows customers in a queue at one of the digital satellite television services subscription pay centres.



Figure 1: Customers' utility pay point center

Source: Sharra, 2014

To date, the introduction of mobile utility bill payment has not visibly led to reduction of congestion at utility providers' pay points. This could perhaps be attributed to customer satisfaction, one of the drivers for service diffusion and adoption. As far as service diffusion and adoption are concerned, a satisfied customer is more likely to recommend a service or product to other potential customers. Customer satisfaction with mobile utility bill payment can go a long way in propelling its adoption. It is therefore important for

stakeholders to gauge and ascertain the levels of customer satisfaction with mobile utility bill payment services.

There have been a number of research projects related to mobile payment systems in Malawi; two of the studies were carried out prior to the introduction of the mobile payment platforms in Malawi. Wandawanda (2005) carried out a study on the general demand for the new and better services in the form of mobile solutions by banks, business owners and younger people. Saidi (2009) looked at the challenges and opportunities of mobile commerce in Malawi. Nyirenda and Chikumba (2013) looked at consumer adoption of mobile money transfer services using Airtel Money as a case. Much as these studies were on mobile technologies, there has been few studies on mobile technology that did not look at customer satisfaction with mobile utility bill payments or mobile payment services in general. As a result, the extent to which customers feel satisfied with mobile utility bill payment and other mobile money applications remains unknown. A study on customer satisfaction with mobile utility bill payment systems in Malawi can probably help explain why congestions still persist at utility providers' pay points.

The June 2014 United Nations Capital Development Fund (UNCDF) report stated that in Malawi, out of the 15.9 Million population in 2014, 33.9% were mobile phone users and 16.6% were Mobile Money subscribers to Airtel and Telekom Networks Malawi (TNM). Mobile money subscribers include individual customers and agents that have subscribed to Mpamba, Airtel Money or Mo626ice. Four (4) % of the Mobile money subscribers are mobile agents who offer mobile payment to customers and provide a link between

customers and mobile network providers. It is however not ascertained whether the introduction of mobile bill payment has satisfied customers in its service delivery, reliability and cost cutting in the payment process.

1.4 Research Objectives

The goal of this research was to evaluate customer satisfaction with the mobile-based utility bill payment systems in Malawi.

Specifically, the research:

1. Assessed customers' satisfaction with mobile utility payment system
2. Identified factors which contribute to customer satisfaction and/or dissatisfaction with mobile utility bill payment systems
3. Investigated customers' preference between mobile-based utility bill payment and cash-based pay point payments

1.5 Motivation of the Study

The introduction of mobile payment system has received mixed reactions from customers in Malawi. Some customers prefer to use mobile payment system while others still use the cash-based system or the cheque-based system. Considering the fact that every new adopted ICT innovation ought to satisfy its customers, the research findings will help to inform on the extent to which customers are satisfied with the mobile payment service in the country.

The study will also help stakeholders involved to know and improve factors that contribute to customer satisfaction and/or dissatisfaction. The factors would help the stakeholders to enhance service quality for the future.

The findings from the study will also contribute to the theoretical knowledge in information technology (mobile systems) design and effective information systems development especially in developing countries. In so doing, the results would contribute to in-depth understanding of using mobile phones in bill payments and on customer satisfaction and quality service delivery.

Chapter Summary

This chapter has provided general background of electronic financial services and products. It has also looked into the genesis of mobile money in Malawi and the use of mobile payment platforms in utility bills. Utility service providers has adopted Mo626ice, Mpamba and Airtel Money platforms for the bill payment. Despite the adoption of mobile payment, customers are still queuing for the utility bill payment in different pay centres hence not known whether the adoption of mobile payment has satisfied customers.

CHAPTER 2

LITERATURE REVIEW

2.1 Introduction

This chapter reviews the literature relating to mobile money, mobile payments and evaluation of customer satisfaction on mobile utility bill payments. Through frameworks the chapter discusses factors that contribute to customer satisfaction in mobile payment.

2.2 Mobile money

Some researchers define mobile money, which is also known as mobile wallet and mobile financial services, as a range of financial services that is accessible to customers through mobile phone devices (Anyasi & Otubu, 2009; Davids, 2012). Others define it simply as money stored using the subscriber identity module (SIM) in a mobile phone as an identifier as opposed to an account number in a conventional banking or as a term that describes the services that allow electronic money transactions over a mobile phone (UNCTAD, 2012; Ernst & Young, 2010).

Mobile money offers an electronic account service which allows customers to use their mobile phone as a virtual wallet for storing ‘cash’ which they can either spend with retailers, pay service providers, transfer to peers, or exchange for physical cash with a participating agent. A mobile phone is used to transmit transfer or payment instructions

deducting from value stored on the SIM, linked to the equivalent real cash value safely held elsewhere, normally in a bank (UNCTAD, 2012). However, it should be pointed out that mobile money was designed to offer financial services to both banked and unbanked people (Abdelghani & Aziz, 2013).

According to Ericsson Consumer Lab (2012) and Intermedia (2013), of all the services that can be transacted under mobile money, airtime top-up, money transfer and bill payments are the most widely used services on mobile money. Some studies on mobile money have also shown that the introduction of mobile money and associated services has led to increase in number of mobile subscribers (Deshmukh & Naware, 2014; Zutt, 2010). In India, for example, the introduction of more mobile money services such as purchasing and selling of goods, net banking, bill payment and information delivery, caused a countless growth in mobile subscribers (Deshmukh & Naware, 2014). In Kenya, the growth of mobile money services has been particularly dramatic because it has overtaken the banking network within a very short period. For example, by August 2010, M-PESA in Kenya had 12.6 million customers and nearly 20,000 agents countrywide compared to 1,510 ATMs and 1,030 banks and bank branches (Zutt, 2010).

The existence of different mobile money services has given customers alternatives to use any of the available services on mobile money. One customer would only use mobile money for bill payment, another customer would use mobile money for banking (cash and deposit money) into the account and still others would choose to use it for shopping in different shops. Globally, the majority of mobile money subscribers (99%) use mobile

money to send or receive money; and the remaining 1% use it for other additional services that include arranging for loans or credit and bill payment (InterMedia, 2010). However, in Kenya the story is different, because there, the most widely used mobile service is bill payment with a 76% usage rate (GSMA, 2014)

.

2.2.1 Benefits of Mobile Money

Mobile Money Includes All the Various Initiatives (Long-distance remittance, micro-payments, and informal air-time topping schemes) aimed at bringing financial services to the banked and unbanked using mobile technology (Tobbin, 2012). This brings about a number of advantages, which attract users to use mobile money. The following are some palpable advantages.

a) Convenience

Mobile money as a financial service is convenient, since a customer can access it anytime and from any place. It is a wireless service delivery channel that offers additional value for customers by providing “anytime, anywhere” access to banking and financial services (Lee & Chung, 2009). In this way, mobile money saves time given that customers make their banking and financial transactions without the need of physical interaction with the other party. This is true even for rural settings as evidenced by a study in rural Cambodia where micro-entrepreneurs discovered that they did not need to travel long distance and queue to access the banking and /or transactions since the transactions would be easily done using their phones at their convenience (Vong & Insu, 2012).

b) Low transactional cost

Mobile money offers a relative advantage to customers by providing cheaper and affordable services to its customers. McKay & Pickens (2010) in their survey, noted that price of using mobile money is 19 % cheaper on average than that of using the banking and cash payment systems. In other words, it is affordable to use mobile money since the service fee charged in using it is minimal compared to other bank service fee (Mbogo, 2010; McKay & Pickens, 2010).

Apart from the service fee, the transaction fee is also affordable and accessible to all levels of people including the low income earners (Mbogo, 2010). In Niger, Aker et al. (2011) analysed the effects of using mobile money accounts for delivery of cash transfers versus traditional methods and found that mobile money reduced the overall transaction costs of recipients, while offering an increase in freedom, flexibility, and privacy. Further, mobile money usage results in the reduction in transportation cost and consequently increase consumer surplus (Sife et al. 2010).

c) Less Complexity

Complexity is the degree to which an innovation is perceived as difficult to understand and use (Rogers, 1983). Mobile money is perceived to be easier to use as it uses an USSD service in which users do not even require to learn steps on how to use it (NSO, 2014; Jack & Suri, 2011). Mobile money subscribers reluctantly adopt and use the service if they find it very complex.

d) Safety

Mobile money allows customers to safely keep their money in their mobile phone account. Omwansa (2009) noted that it is safe and secure to have mobile money account as the money cannot be stolen or lost. This is because in a scenario where a customer loses a mobile phone, no one can access the mobile money account since it has a Personal Identification Number (PIN). Mobile money is also safer as people can walk with a lot of money in their phone without having the fear of losing it and they can also withdraw the cash anytime they want (Omwansa, 2009). Jack & Suri (2011) assert that mobile money users find it safe, and trust their funds are free from dangers of theft and inaccessibility to other family members in their phones.

e) Savings

Mobile money serves as a phone-cum-savings account, which enable people without a formal bank account to engage in safer and more efficient savings mechanism (Chitakunye et al. 2014). The use of mobile money also increases savings (Demombynes & Thegeya, 2012). In Kenya, 75 % of M-PESA household users use the mobile money as an account to save, and they find it helpful in times of emergencies (Jack & Suri, 2011).

2.2.2 Challenges of Mobile Money

A number of challenges hinder the use and adoption of mobile money (Otieno et al. 2016). The following are such some challenges:

a) Network coverage

Mobile money service is either an USSD or SMS based system and works only in areas where mobile network coverage is available. Mobile money requires network

infrastructure support from the mobile network operators and it is not accessible and use in areas where there is no mobile network coverage (Balan et al. 2009).

b) System interoperability

Interoperability is the ability of a mobile money user on one platform to transact as seamlessly as possible with a user on another platform (GSMA, 2015). The question of interoperability arises in that mobile money platforms only interact platforms within the same mobile network. In other words, a user cannot send money from one mobile network platform to another.

c) Transactions delay

This occurs when, for example, a user tops up his/her mobile money account through an agent but it takes time for the account to be updated. Mobile money subscribers get irritated at the transactions delay as they are forced to wait for over a day for their mobile money account to be updated (Otieno et al. 2016).

d) Poor Network connectivity

Mobile money is mostly affected by poor and unstable network performance by the network mobile operators. In most cases, customers fail to access the mobile money due to network unavailability (Nicholaus & Venkatakrishnan, 2013).

2.2.3 Mobile Money Applications

The key innovation of mobile money is the introduction of platforms that provide financial services and intersect the mobile technology and financial sector in the use of mobile money (Hope et al. 2011). As table 1 shows, various countries have adopted various mobile applications. M-PESA, the largest mobile money application in Africa

was launched in 2007 by Vodafone and Safaricom (Safaricom, 2011). M-PESA is the fastest growing mobile application with 2.7 million users and almost 3,000 agents in 2008, increasing to 13.5 million customers with over 21,000 agents by 2010 (ibid).

Another mobile money application is Airtel money, launched by Bharti Airtel Limited, a leading global telecommunications company in India but operates in 20 countries across Asia and Africa (Airtel, India, 2012). Airtel Mobile application enables customers to send and receive money; top up airtime; send airtime to someone else's phone; and make payments for utility bills, goods and services (Airtel, Africa, 2010). MTN is another mobile application launched by MTN in South Africa in partnership with over 10 banks. MTN mobile money provides a fast, secure and affordable way of transferring money within and outside the country, for making payments such as utility bills, insurance and employees' salaries, for airtime top up and for paying for airline tickets and other goods and services. MTN is available in 14 countries (MTN Group Limited, 2016).

M-Sente Mobile Money is another mobile money application introduced in 2010 and is operated by Uganda Telecom Limited (UTL). It provides a reliable and affordable facility for the transfer of money value from one place to another and from one person to another or any other entity using the Short Message Service (SMS) capabilities of mobile phones (UTL, 2010). M-Sente is available to both banked and unbanked customers and customers are not required to have bank accounts to carry out transactions using the M-Sente Mobile Money system. M-Sente allows users to deposit, transfer and withdraw funds from the mobile phone. It also allows users to buy airtime and pay bills directly.

Table 1: Summary of mobile money applications by country

MOBILE MONEY APPLICATION	COUNTRY
Airtel Money	Chad, DRC, Gabon, Ghana, Kenya, Madagascar, Malawi, Niger, Nigeria, Congo, Rwanda, Seychelles, Tanzania, Uganda and Zambia.
M-PESA	Kenya, Zambia, Tanzania,
MTN (Mobile Money)	Benin, Botswana, Cameroon, Congo, Ghana, Guinea Bissau, Guinea Republic, Ivory Coast, Liberia, Nigeria, Rwanda, South Africa, Swaziland, Uganda and Zambia.
UTL (M-Sente).	Uganda

2.3 Mobile Utility Bill Payments

Mobile payment is a sub-group of e-payment where mobile devices or other wireless communication devices are used to access an account for the payment of goods, services and bills (EU, 2004). Mobile devices are connected to payment access using a mobile service provider network where a service provider's server is connected to the bank server using merchant (Helmi, 2011). The connected servers accomplish the authentication and authorisation function of the mobile utility bill payment, and subsequently present a confirmation of the completed transaction (Tata Consultancy Services, 2008).

Mobile payment process involves different parties of which each has its roles and objectives. The parties involved are Customers, Mobile network service providers, banks and utility bill service providers. Customers are the ones who own the mobile device and

pays for the service or product. The customer initializes the mobile purchase, registers with the mobile network service provider and authorises the payment. The customer accesses the service or product through a mobile provider. A Mobile network service provider offers the service or product to the customer and sends the clearing and settlement of the bill to the bank. The bank then confirms the money transfer to the service provider (merchant). The utility service provider is the company that offers utility services to customers, and they update the customer's utility account see figure 2.

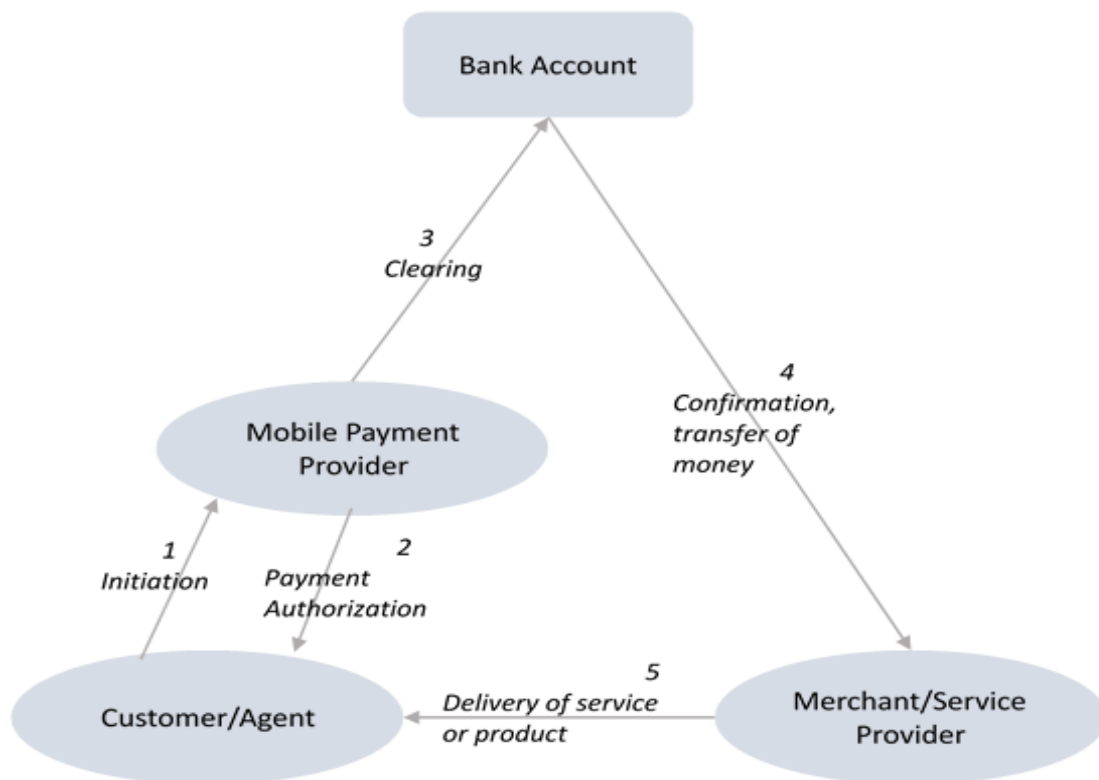


Figure 2: Mobile payment procedure –example

Source pousttchi, 2003

Mobile payment uses mobile devices that include telephones, personal digital assistants and any other devices that can be connected to mobile networks for the purpose of making payments (Herzberg, 2003). There is, however, confusion between online and mobile payment as sometimes computers can be connected to the internet using mobile broadband services to make online payments (Nam et. al, 2008). For the sake of clarity, this research focused only on mobile payments that use handheld mobile devices such as mobile telephones and smart phones, and excluded laptops and personal computer (PC) devices.

World Bank (2010) revealed that the mobile payment intersects the banking and telecommunications services and falls into two categories: payment for the daily purchases and payment of bills. Daily purchases payment usually complements with cheque, cash, credit and debit cards, while payment of bills provides access to account-based payment instruments such as utility bill payments, money transfers, Internet banking payments, direct debit assignments, or electronic invoice acceptance (Dahlberg et al., 2008).

Mobile utility bill payment in most companies is used as a mode of payment in order to raise efficiency and boost business growth through cheap, efficient and reliable money service (Simuyu, 2015). Mobile payment is the more widely used service in mobile money accounts than other means of bill payment and is one of the fastest growing technologies in the world as compared to other payment services because it provides the needed platform to reach out to the rural poor and the unbanked with a financial service

(Penicaud, 2013). Mobile utility bill payment also reduces the need for cash transaction and risks associated with cash handling. More than one billion customers in developing markets have access to a mobile phone that has mobile utility bill payment facility but do not have a formal bank account (GSMA, 2014). The mobile utility bill payment penetration rate however differs in countries depending on different factors such as demographics, socioeconomic status and technology readiness (Akiyoshi & Ono, 2008).

In Tanzania, mobile money users are rapidly increasing because of the introduction of a wide range of services and goods such as medical bill payments, groceries and examination fees at the National Examinations Council of Tanzania (NECTA) (InterMedia, 2013). On the other hand, M-PESA, a Mobile bill payment platform in Kenya, has been highly used by both customers and service providers as a means of bill payment and cash transfer. According to the Kenya's central bank, 87% of the country's \$55-billion GDP passed through M-PESA in 2014 (Safaricom, 2011). M-PESA has proved to be helpful to customers for saving cost of travel expenses, ease of transacting whenever/wherever and reduced the risk of carrying cash (Mas & Ignacio, 2009). M-PESA has however, received a hitch in circumstances where customers wait for too long to receive payment notification. In some cases, customers do not receive the payment notification at all. M-PESA service suffers because of the delay or failure that exists when updating the customers' accounts between Safaricom (A mobile network operator) and the customer's account (Deshmukh & Naware 2014). Mobile utility bill payment platforms therefore need the ability to do real-time notification when events occur (Jaiswal, 2011).

Mobile payment in other countries such as the UK has extended their technology to services such as car parking where customers initially register their mobile number, car license, plate number and their credit card number with the car park authorities, to create what is called a virtual parking ticket account (Smith & Roth 2003). Whenever the customer needs to park, they send an SMS text message to the number provided by the car park authorities and the authorities send an authorisation message to the customer. The authentication, authorisation and completion of the mobile payment process is done through the mobile phone.

In Bangladesh, the explosion of mobile phones and vast distribution channel of mobile payment have made mobile utility bill payment become a natural choice for customers on other existing utility bill payments alternatives hence increasing number of users in mobile payment.

As for Malaysia, the growth of mobile payment users has been so rapid contrary to the expert's expectations, and this has led to critical changes in technological market, hence compromising the quality of telecommunication services like mobile utility bill payment (Hashed et Al., 2012).

2.3.1 Benefits of Mobile Utility Bill Payment

Literature on mobile payment especially that from commercial market research reports proposes that mobile payment solutions have benefits (Strategy Analytics, 2001; Forrester Research, 2001; Gartner Group, 2001; Mobey Forum 2001). The following are at least the suggested benefits:

a) Ease of use

Mobile utility bill payment is deemed to be easy to use for customers. As opposed to cash payment in which users are involved in different steps of bill payment, mobile payment platform is created as a single sign –on in which customers just follow the steps that are already defined in the platform. (Davis, 1989)

b) Secure

Mobile utility bill payment reduces the loss of money stored in the phone (USAID, 2013). For example, for every bill payment process, a customer is asked for a PIN if he/she wants to do the payment process and as part of the security check, customers using mobile phone for bill payment are asked to verify their bill account details during the payment process.

c) Reliable

Utility bill payment transactions on mobile payment are reliable and credible as bills paid using mobile payment are always correctly updated (Yeow et al, 2017).

d) Saves time and cost

The use of mobile payment for utility bills allow customers to execute the bill payment at any time and from anywhere as long as the mobile money account is loaded with money (Kim et. al, 2004).

e) Handle micro payments

Mobile utility bill payment has the ability to handle micro-payments (payments that have fractions like small kwachas and Tambalas) .These enable customers to sort their exact bill amount.

f) No queues

In mobile utility bill payment, there are no queuing hustles as customers use their own phones at their appropriate time. Mobile payment reduce queues in banking halls and it allow customers to pay for their bills anytime and from anywhere (Tilahun & Tafa, 2016)

g) Mobility

Customers do not need to travel to any pay centre for the bill payment. Customers who uses M-PESA in Kenya for example, claimed they take less time in paying utility bills using mobile payment than settling bills at the bank since they do not travel to utility bill pay center (Hope et al, 2011).

h) Fast

Executing utility bill transactions using mobile phones is faster than counter cash payment in which sometimes the cashier that processes the bill payment is too slow. Airtel Money Customers in Congo prefer use of mobile payment to counter cash because it is faster to use the mobile payment than the cash payment (GSMA, 2013).

i) Cheaper

Mobile payment method saves cost and is suggested to be cheap. Mobile payment does not involve any travelling cost and the transactional cost charged in the mobile payment is estimated at zero in M-PESA as compared to cash payment that has travelling cost attached to it (Hope et al, 2011).

These mutual benefits on mobile bill payments offer to utility providers, mobile payment platform operators and utility customers have been the driving factor for the introduction of mobile utility bill payments in Malawi and other developing countries (Ernst &Young, 2010).

2.3.2 Challenges of Mobile Payment

Mobile payment has only become a normal practice in a few countries (Beshouri et al., 2010). The following are the least challenges for the failure of adoption of mobile payment in many countries:

a) Network instability

Availability of mobile payment depends on the stability of a network provided by the mobile operator. In most cases however, customers fail to pay for their bills through the mobile payment system because the network is either not available or it is unstable (GSMA, 2013)

b) Late account update

Utility accounts are mostly challenged by late account update with the mobile payment system. In Kenya, M-PESA customers are affected by late account update when they have made a utility payment through mobile payment (Mbogo, 2010).

b) Mobile payment platform Unavailability

Customers fail to pay for their bills because sometimes the payment system is not available due to either network or system connectivity challenges (Ndunge & Mutinda, 2012).

2.3.3 Mobile Utility Bill Payments in Malawi

Mobile payment service was introduced to overcome the risks of moving around with huge amounts of money to pay bills at the service provider's centre and also to reduce the hustle of queuing at the service provider's pay centers. Customers' objective to use mobile payment service depends on the following: reliability, service quality and cost attached to the payment service. Service providers adopt mobile payment system as a way of improving their payment service delivery, decongest customers' queues in the bill payment sector and allow customers pay for their utility bills any time they want.

Cash has been the most widely used method for utility bill payment in Malawi where approximately 75% of financial transaction were conducted through cash payment up to the early 2000s (NPS 2008). But in the period of April 2008 to March 2009, Reserve Bank of Malawi (RBM) carried out a number of activities aimed at strengthening the operations of the National Payment System (NPS) (RBM, 2012). Electronic bill payment was one of the strategies outlined in the strategy and on top of the traditional cash payment, RBM introduced Internet banking, mobile payment and point of sale (POS) as means of bill payments (RMB, 2012).

Companies such as Electricity Supply Commission of Malawi (ESCOM), Blantyre Water Board (BWB) and Multi Choice in conjunction with the banks and mobile network service providers introduced the mobile payment as a way of adding value to their services. Banked customers can now use the Internet banking, POS and mobile payment for different bill payments. However unbanked customers use mobile payment as an

alternative to cash payment for the bill payment. Cash payment for the bills is done at the utility service provider's offices but alternatively, unbanked customers pay for utility bills and other subscriptions from any of the following banks: National Bank, Standard Bank, First Merchant Bank (FMB), ECO Bank, New Building Society (NBS) and First Discount House (FDH) Bank. There are also designated pay points such as Puma filling stations and Malawi Posts and Communications offices where unbanked customers can also pay for their utility bills. Customers do not need to have an account with the listed banks if they want to pay through the bank.

There has been a dramatic increase in electronic bill payment since its introduction in 2008. The electronic bill payment has overtaken the cash payment with 62.1% of the bills being paid electronically, mobile payment being the most widely used with 57.8 % (NPS, 2017). Prior to the introduction of mobile payment service, customers cleared their bills at the service providers' pay points. Customers had to physically move with the money to the service centres and pay for their bills. Bill payments were done during working hours which made customers queue for it. But with the introduction of mobile payment, there is no need for customers to physically carry money to the service providers' pay centres. Customers can now pay bills anywhere where there is a designated pay centre and at any time.

2.4 Customer Satisfaction

Customer's satisfaction is the company's ability to fulfil the business, emotional, and psychological needs of its customers (Pairot, 2008). Another researcher defined customer satisfaction as a mental state which results from customer's comparison of expectations prior to a purchase with perceptions after a purchase (Kolter, 2000). Satisfaction in a customer is subjective and differs depending on one's feelings of pleasure or disappointment that results from comparing a perceived performance (an outcome) against the expected performance of a product or service. Customer satisfaction is an ongoing process, and there are two principal interpretations of measuring it within the literature: satisfaction as a process, and satisfaction as an outcome of the product or service (Parker & Mathew, 2001).

2.4.1 Measuring Customer Satisfaction

Measuring customer satisfaction depends on the difference between two constructs: expectations and perceptions (Miller, 1977). Expectation can be defined in a form of an *ideal* (what a service or product performance "can be"), the *expected* (what a service or product performance "will be"), the *minimum tolerable* (what a service or product performance "must be") and the *desire* (what a service or product performance "should be") (ibid). Perception on the other hand is the process by which an individual receives, selects and interprets stimuli to form a meaningful and coherent picture of the service or product (Schiffman et al., 2001).

Customer's expectations and perceptions of the service or product differ depending on location and literacy levels. Early adopters of M-PESA, a mobile payment service in Kenya, were customers in urban, educated and banked because they had higher expectations on the services of the mobile money than the poor and the rural (Mbiti & Weil 2011). Another research on M-PESA mobile money found that the service was mostly used by the more literate, with higher levels of education and wealth, bank accounts, urban dwellers, and a slight male bias (Jack & Suri, 2011).

Measuring customer satisfaction is a continuing process and research has reviewed four different forms in which satisfaction can be measured (Bearden & Teel, 1983). Firstly, Customer satisfaction can be measured by evaluating post choice judgment of a product or service that leads to a specific purchase decision (Oliver, 1997; Churchill & Surprenant, 1992). There are five stages involved in judging a choice of the service or product (Chaston et. al., 2001), and these are: 1. new recognition of a service or product; 2. information search; 3. information evaluation; 4. purchase decision; and 5. post-purchase evaluation. Secondly, customer satisfaction can also be measured by comparing customer's product expectations and perceived performance (Miller, 1977; Oliver, 1997).

Thirdly, customer satisfaction can be measured by assessing the likelihood of the customer that uses the service or product to recommend it to a friend (Gustafsson, 2006). Customers who enjoy using the service or product become loyal and are much less susceptible to negative information about the brand, and are likely to recommend it to friends (Donio et al., 2006). Customer loyalty depends on the customer attitude towards

the use of the service hence customer satisfaction can also be measured by asking people how much they like the brand, feel committed to it, and if they would recommend it to others, and have positive beliefs and feelings about it (Dick & Basu, 1994). Customer loyalty in this study is referred to as the customer behaviour expressed by retention and emotion expressed by word-of-mouth (Bansal & Taylor, 1999; Ranaweera & Prabhu, 2003). Lastly, Satisfaction is also measured by assessing the customers' feelings and perception towards the overall service (Lepkova & Zukaite-Jefimoviene, 2012).

It is important to measure customer satisfaction in every new innovation as it helps to get feedback from customers and allow organisation to understand and improve the key drivers that create satisfaction or dissatisfaction (Ankra, 2013). Customer satisfaction may have direct and indirect impact on business profit. Further, customer satisfaction positively affects business profitability in the sense that customers who are satisfied with the service or product are likely to reuse it and even recommend it to other customers hence increase in usage of the service and in business profitability (Anderson et al., 1994; Yeung et al., 2002; Luo & Homburg, 2007). The extent to which customers patronise these services demonstrates loyalty. Research has shown that customer satisfaction is one of the key factors that lead to customers' repeated use, loyalty, and dissemination of positive word of mouth regarding any product or service (Angelova, 2011).

2.4.2 Customer Satisfaction and ICT

Information Communication Technology (ICT) involves the processing, transmission, and display of information and a set of activities facilitated by electronic means

(Kolodinsky et al., 2000). Information Communication Technology has created a lot of financial innovations in an organisation which adequately provide services that satisfy customers (Law, 2009). The use of ICT innovations in an organisation plays an important role in the strategic and operation management, and facilitates the successful financial services (Agwu & Carter, 2014).

The diffusion and adoption of ICT innovations permeate through a platform and service that positively or negatively affect customer satisfaction (Kabanda, 2014). Quality of ICT innovation products and services has become a utility which needs to be well managed to assist core business of an organisation in achieving the mission and vision of that organisation. Otiso et al. (2012), posits that the aim for service excellence in ICT product and service does not imply that organisations should continually and always exceed expectations; but ICT service excellence is to provide the customers with what they value in order to induce feelings of delight. In ICT, a customer is satisfied as long as the expectations are met or exceeded by the service provider (Cranage, 2004). Customer satisfaction is often linked to service quality of an ICT product or service and it is therefore important to continually improve ICT innovation in order to enhance customer satisfaction.

Much as ICT service delivery affects customer satisfaction both positively and negatively, the levels of customer satisfaction on mobile payment is not yet known particularly in the case of Malawi (Angelova, 2011; Anderson et al., 1994; Beshouri et al., 2010). This research aims to find whether customers are satisfied with mobile

payment for the utility bills and the factors that contributes to satisfaction or dissatisfaction.

2.5 Relevant Theories

2.5.1 Information System Model

The Information Systems model mostly covers studies that describe the success, satisfaction, acceptance and usage of information systems. DeLone & McLean (1992) introduced a model in which they stated that measurement of an IS success is critical, and it is important to understand the value of its management actions and investments. The creation of the IS model in 1992 received a great response in the IS literature and in order to organise diverse research and to present more integrated view of the IS concept success, DeLone and McLean introduced a comprehensive, multidimensional model of IS success in which six different aspects of an IS success that leads to customer satisfaction were produced (DeLone & McLean, 2003). Since its introduction in 1992, the D&M IS Success Model has created a broad response in the literature.

The first dimension of IS model is information quality. Information quality represents the output of the system in terms of how relevant, understandable, accurate, concise, complete, timely, and useable it is. Information quality can be known by asking the IS user if the output of the system is accurate, precise, current, timely, reliable, complete, concise, relevant, and in a preferred format (Bailey & Pearson, 1983). Irrelevant, insufficient, inaccurate or out-of-date IS output creates doubts to users on the service

provider's ability, integrity and benevolence to provide quality information to them (Zhou, 2012).

The second dimension in IS model is system quality. System quality has been used in many different ways in the IS model literature, but some of the most relevant aspects are convenience of access, flexibility and integration of system, response time reliability, system ease of learn and use (Bailey & Pearson, 1983; Belardo et al., 1982). System quality contributes to user's ability to use the system through perceived usefulness, navigational structure and visual appeal (Franz & Robey, 1986; Vance et al., 2008). A poor system quality decreases user expectation of acquiring positive outcome in future (Wimox & Barabara, 2001).

Third aspect of IS model is service quality. Service quality is one of the most important aspect to customers and service providers in business and information systems. Much as customers express their desire in an information system for a quality service or product, service providers also need to consider a service quality as a key to develop services and products in order to gain competitive advantages (Ali, 2003). Service quality is usually judged by the customer and varies according to customer's perception of the service quality that are measured immediately after the customer has used the service. Service quality is the subjective comparison that customers make between the quality of the service that they want to receive and what they actually get (Gefan, 2002).

Service quality sustains the customers' confidence in a service providers' delivery, attract more new customers, increase business with existing clients, reduce dissatisfied customers with fewer mistakes, maximise a company's profits and increase customer satisfaction (Berry et al., 1994; Lee et al., 2000). Grönroos (1991) conceptualize a service quality where he did an evaluation of customer satisfaction by comparing their expectations and performance of a service quality. In his model, shown in Figure 3, he discovered that a service or product is measured by technical and functional quality.

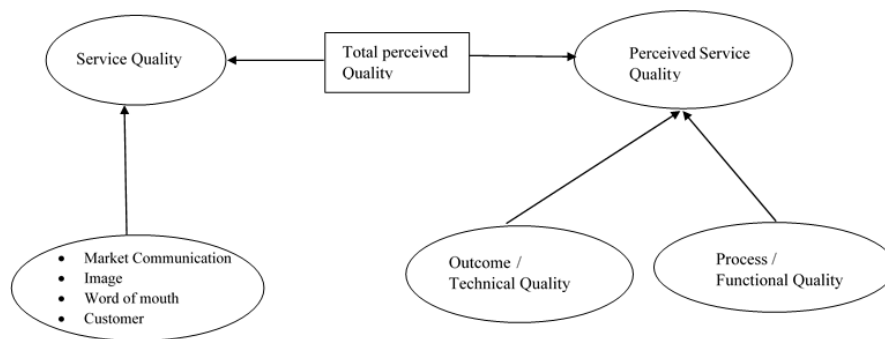


Figure 3: The perceived service quality model.

Source: Grönroos (1991)

Technical quality measures “*what*” the service is delivering to customers and includes the system and infrastructure involved in service delivery. Technical quality deals with the outcome that customers get after using the service or product. Functional quality measures “*how*” the service is reaching the customers and includes customer’s behaviour, attitudes and accessibility towards the service or product. Functional quality deals with the processes that are involved when a customer is interacting with the service or product.

Grönroos (1993) also discovered a third dimension in service quality called product or service image that is influenced by technical and functional service quality. Technical and functional service quality can either form a negative or positive image of a product or service, depending on customer's experience and attitude towards using the mobile payment (Ghobadian et al., 1993). In the case of service quality perception, the product or service image can be regarded as a filter (Grönroos, 1984; 1988).

Quality of a service is achieved when a service provider satisfies or exceeds consumers expected service, which consequently leads to customer satisfaction (Seth et. al, 2005). Service quality appears to be one of the service factors contributing to customers' satisfaction judgments (Cronin & Taylor, 1992; Ruyter et al., 2001; Spreng & Mackoy, 1996). Service quality is therefore the system support delivered by service providers.

The fourth aspect in IS model is system use which is objectively measured by capturing the connect time, functions utilised and/or the frequency of IS use by the users (DeLone & McLean, 2003). System use is the variable that is measured after the user has judged the information, system and service quality. However, the frequency of use is apparently not enough to measure sufficient success of an IS. Other variables like perceived ease of use and perceived usefulness are used to measure user's satisfaction of system (Davis, 1989). System use affects user's attitude toward use, intention to use and actual use of an IS.

Other literature observed that system use is a construct that is used to measure the actual use of the system and the reported use by the users (King & Rodrigues, 1978; Lucas Jr., 1978; Swanson, 1974; Maish, 1979; Fuerst & Cheney, 1982; Raymond, 1985). DeLone & McLean (2003) report that use has also been studied at different levels. This emphasize what Vanlommel & DeBrabander (1975) found, the four levels of system use in IS which include: getting instructions, recording data, control, and planning.

User satisfaction is the fifth aspect in IS model. According to DeLone & McLean (2003), user satisfaction is one of the most important dependent variables used in measuring the success of the system. DeLone & McLean (2003) utilise the measured repeated purchases to assess user satisfaction in a system. User satisfaction in an IS constitutes user's level of satisfaction. Studies done by Ives et al. (1983) and Doll et al. (2004) used user satisfaction as an instrument to determine satisfaction level of a user in IS. In their study, they noted that information, system and service quality are not the only factors that determine user satisfaction but system use and user satisfaction determine satisfaction level in an IS.

Nevertheless, Information, system and service quality of an IS contribute to user satisfaction of an IS. User satisfaction in using mobile payment is an important factor to consider when measuring the payment performance. When mobile payment system and service meet customers' expectations, it is believed that a user gets satisfied and becomes loyal to the service. But when what the system and the service offer is contrary to what the user expects, it is then concluded that the system does not satisfy the customer. The

authors clarify that use and user satisfaction are linked in the sense that use happens before user satisfaction, but in a causal sense, a positive experience with the use of the system will increase the satisfaction of the user. Furthermore, an increased user satisfaction will increase the intention to use which ultimately will increase satisfaction level (DeLone & McLean 2003).

The sixth aspect of IS model is net benefit which refers to any and all outcomes that the IS causes to occur for the individual, the organisation, or even the mark (Pérez-Mira, 1995). To understand net benefit results, it is important to measure the quality of the user's experience and the customer's usage of, and satisfaction with, the system product or service (DeLone & McLean, 2003). Different researchers have used different constructs to measure net benefit aspect in an IS. However, it has been concluded that the outcome of net benefit characteristics falls into three categories: the financial, efficiency and customer relationship outcomes (GSMA, 2014). An IS in an organisation needs to be continually enhanced since an improved IS information, system and service quality decreases costs, increases customer loyalty, and ultimately leads to better financial outcomes (Sousa & Voss, 2002).

Holsapple & Lee-Post (2006) modified the IS model and came up with the e-learning success model where they concluded that net benefit is an impact of IS after the user has assessed the IS. The outcome can either be positive or negative, depending on whether one was satisfied or dissatisfied in the use of the IS.

Figure 4 below summarises the IS model aspects and how they are linked to user satisfaction in the use of an IS product or service.

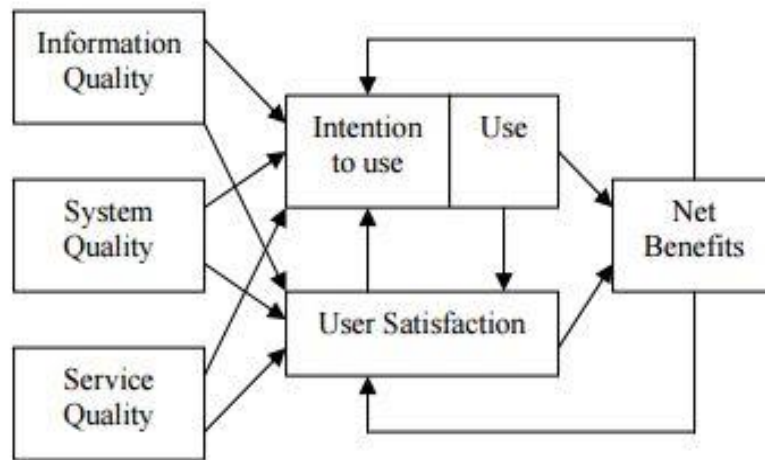


Figure 4: The IS model

Source: DeLone & McLean 2003

2.5.2 Expectancy Disconfirmation Theory

Expectancy Disconfirmation theory model implies that customers purchase goods and services with pre-purchase expectations about the anticipated performance (Yüksel & Yüksel, 2004). There are two dominant concepts that were constructed to determine customer satisfaction in expectancy disconfirmation theory: customer expectations and perceptions (Peterson et. al, 1993). The theory's early researchers on customer satisfaction proved that expectations serve as a comparison standard to judge the service delivery performance as perceived by the customers (Halstead, 1999; DeSarbo, 1988).

Customer expectations in Expectancy Disconfirmation Model (EDM) shown in figure 5, originates from either the brand experience of the product or service, word of mouth referral from friends and relatives or marketing communications of the product or service (Peterson et al., 1993). Perception on the other hand originates from the various perceived service quality factors that a customer judges. A comparison between expectations and perceived performance of a service forms disconfirmation and satisfaction judgments (Halstead, 1999). If the outcome matches the expectation, confirmation occurs, and disconfirmation occurs where there is a negative difference between expectations and outcomes (Yüksel & Yüksel, 2004). A customer is either satisfied (confirmed) or dissatisfied (disconfirmed) as a result of positive and negative difference between expectations and perceptions. Enhanced satisfaction, satisfaction, and dissatisfaction produce either negative or positive results of the service or product, and the results include customer loyalty, decrease or increase of costs, and positive word of mouth of the service. The Expectancy Disconfirmation Model (EDM) suggests a dynamic relationship between the prior expectations of consumers, post-experience perceptions of the quality (or performance) of the product or service, the confirmation or disconfirmation (either positive or negative) of these prior expectations based on perceptions of performance (the gap between expectations and reality), and, finally, resulting satisfaction with an experience.

To measure customer satisfaction on the use of mobile payment, the research considered customer perception and expected variables. Customer perceptions were experiences that customers were having as they are using the mobile payment while customer expectations were what customers had in mind before the adoption and usage of the mobile payment.

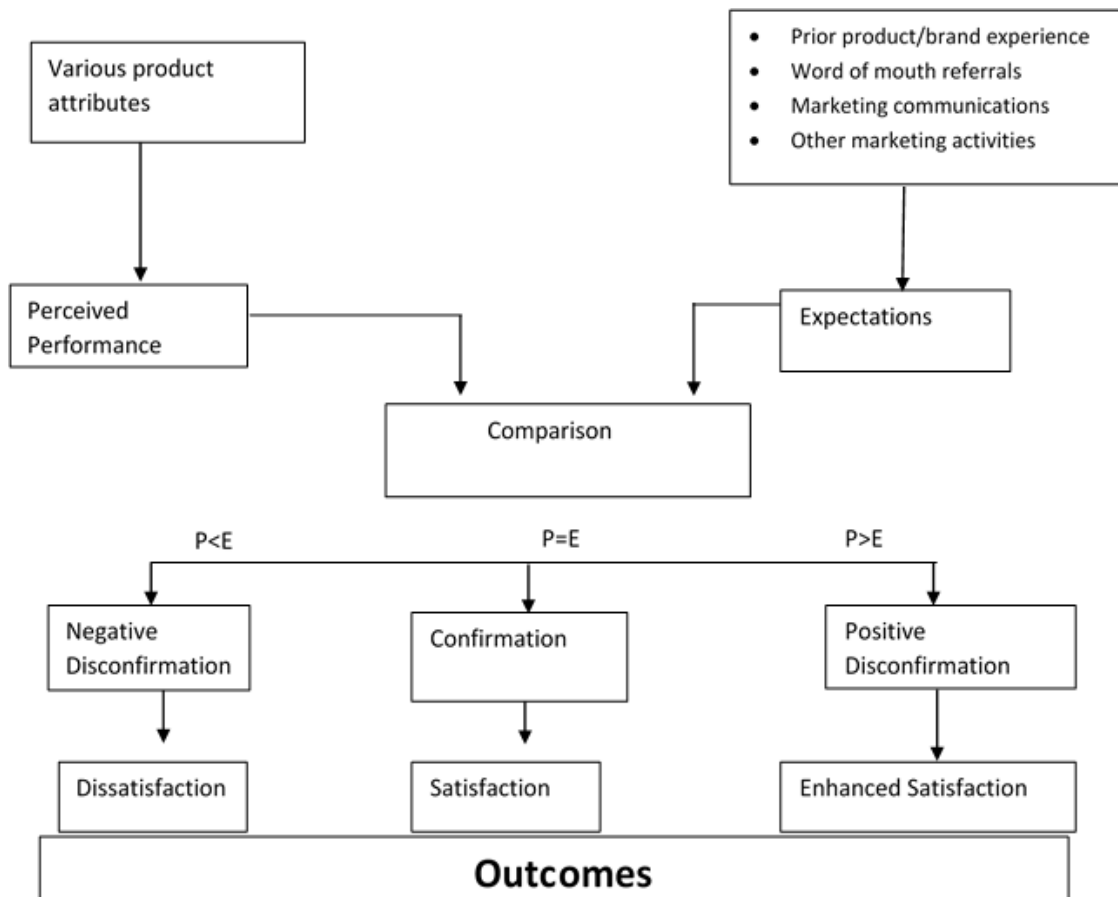


Figure 5: Expectancy disconfirmation theory

Source: Peterson, et al., 1993

2.5.3 Extended Valence Framework

Extended Valence framework is a theory that explains how trust affects customer satisfaction in electronic commerce (Peter & Tarpey, 1975). Recognising that trust has been identified as a vital factor for the success of electronic commerce, the extended valence framework has been adopted to help in measuring customer satisfaction (Gefen, 2000; Kim, et al., 2004; McKnight & Chervany, 2002; Pavlou & Fygenson, 2006). Trust in extended valence model is assumed to affect product purchase intention directly and indirectly through two mediators—perceived risk and perceived benefit. The trust in e-

commerce is measured after the customer has done the purchase and is determined by the risks and benefits that were encountered during the payment process. If the customer meets risk, it is assumed that it minimises customer's trust and affects the satisfaction level, while if the customer meets the benefit, it maximises the customer's trust to repurchase the produce hence increases customer satisfaction level. The Extended Valence Framework is shown in figure 6.

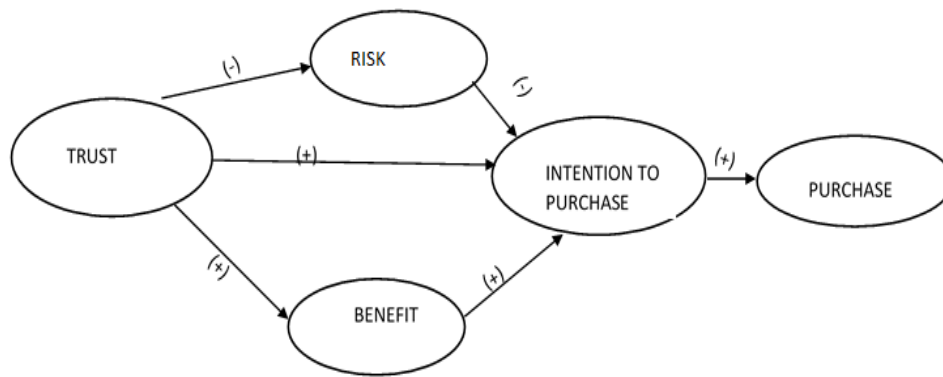


Figure 6: Extended valence framework

Source: Peter & Tarpey (1975)

2.6 Theoretical Framework

Based on the models discussed above, the researcher conceptualized that there are various factors that contribute to customer satisfaction in the mobile payment. It has been discovered that customer satisfaction is obtained by comparing customers' expectations against perceived performance of the mobile payment that is influenced by trust.

The researcher has adopted customer expectation attributes from the expectancy disconfirmation model which are the prior brand experience of the product or service,

word of mouth referrals and marketing communications. The perceived performance attributes were adopted from the Information systems model and they are: Service quality, System quality and Information quality.

It was noted that the customer develops a trust attitude when he/she compares what was expected against what he/she has actually experienced during the service delivery (perceived performance). Customers who no longer trust the mobile payment are negatively disconfirmed and are dissatisfied with the service. On the other hand, customers who have trust on the mobile payment are either confirmed or positively disconfirmed which results in satisfaction and enhanced satisfaction. The trust concept originates from the extended valence model.

Lastly satisfaction and enhanced satisfaction produce positive outcomes such as customer loyalty and decrease in cost, while dissatisfaction produces negative outcomes such as use rejection use mobile payment system.

From these observations, a theoretical framework, as shown in figure 7, was developed that shows factors that contribute to customer satisfaction in mobile payment.

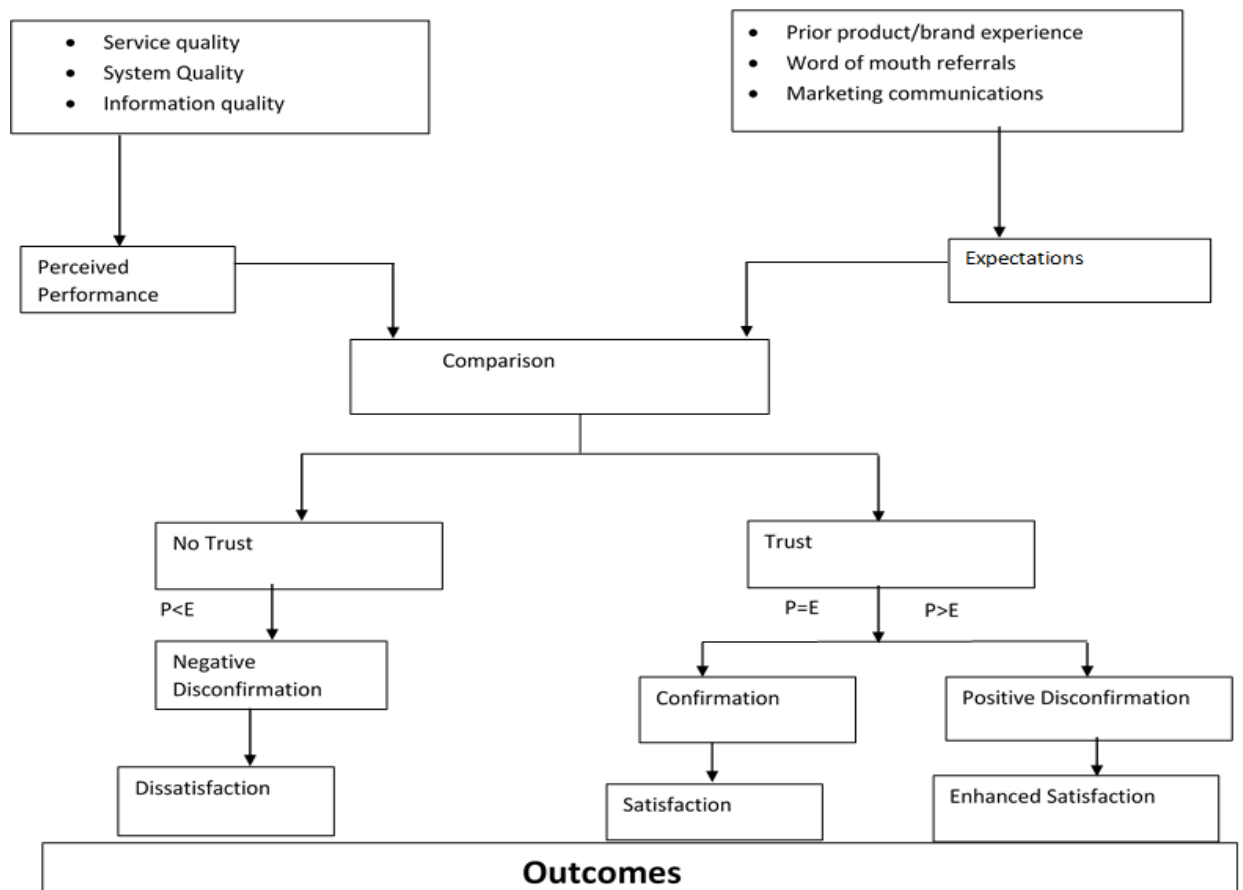


Figure 7: Theoretical Framework

CHAPTER 3

METHODOLOGY

3.1 Introduction

Kothari (2000) defines research methodology as a way to systematically solve research problems. Methodology describes in detail how the research was and the methods that were used to achieve the research objectives (Burns & Bush, 2000).

This chapter presents procedures that were taken in collecting and analysing data. The stages include the research design, study location, study population, sampling techniques, data collection and analysis procedures.

3.2 Research Design

A research design is a master plan specifying methods and procedures for collecting and analysing the required data (Churchil, 2002). The research design helps the researcher to obtain relevant data that would fulfill the objective of the study. There are three types of research designs, namely; qualitative method, quantitative method and mixed method (Creswell, 2009).

Denzin & Lincoln (2000) defined a qualitative research as a set of interpretive and material practices that makes the world visible and is concerned with a qualitative

phenomenon like a phenomenon relating to or involving quality or kind. It is concerned with subjective assessment of attitudes, opinions and behaviour. Quantitative research on the other hand is based on the measurement of quantity or amount and is applicable to phenomena that can be expressed in terms of quantity (Kothari, 2004). Quantitative research explains phenomena by collecting numerical data that are analysed using mathematically based methods (in particular statistics). A mixed research is a combination of both qualitative and quantitative research approaches.

This research adopted the qualitative research approach since it interprets quality of a mobile payment service. There are five types of qualitative research approach: ethnography, narrative, phenomenological, grounded theory and case study (Meyers, 1997). Ethnography research is the type of research in which a researcher becomes the participant observer by immersing himself or herself in the targeted participant's environment in order to understand the goals, cultures, challenges, motivations and themes that emerge. Narrative research weaves together a sequence of events usually from just one or two individuals to form a cohesive story. Phenomenological research describes an event, activity, or phenomenon, the aptly named phenomenological study. Grounded theory describes the essence of an activity or event; thus, grounded theory looks to provide an explanation or theory behind the events. A case study involves a deep understanding of a phenomenon within real-life context, and evidence of a phenomenon is obtained through multiple types of data sources (Yin, 1984). Case studies can be explanatory, exploratory, or describing an event.

This study used a case study research approach. A qualitative case research is concerned with the opinions, experiences and feelings of individuals that will produce subjective data and the data cannot be counted (Beverley, 1996). Exploratory case study research tends to tackle new empirical problems on which little or no previous research has been done (Brown, 2006). Sandhursen (2000) explained that it results in a range of causes and alternative options for a solution of a specific problem.

It was considered feasible in this research to follow an exploratory qualitative research approach because it provided an insight on the level to which customers are satisfied with mobile payment so as to arrive at the contributing factors for the customer satisfaction. The research mainly based assessment on experiences, feelings, opinions and factual data that people have in using the mobile payment (Beverley, 1996). This approach enabled the researcher to understand the problem better and address the research questions defined through a face-to-face interview, seeking customer opinions, experiences, feelings and observation data collection methods.

3.3 The Study Location

This research was conducted in Blantyre, the commercial city of Malawi. Blantyre was chosen owing to a number of reasons. First, the question of cost was considered. Since the researcher resides in Blantyre, it was deemed cheaper to use this city. Second, being a commercial city, Blantyre has high population of mobile users and mobile payment users, and thus crucial for this research. Blantyre city was also considered convenient since mobile utility payments are mostly accessed by urban population.

During the study, the researcher visited different pay centers - National Bank of Malawi (Mo626ice section), Puma Filling Stations (at Shoprite, Blantyre-Kandodo Corner Shop and Limbe-Hardware) Electricity Pay Centres, Multi Choice Malawi, and Chichiri Pay Centre for ESCOM and BWB, to informally observe whether customers who are on mobile money prefer counter service in paying for utility bills to mobile payment. Informal observation helped to gather raw information as to help explain why registered customers still opt to use counter service rather than the mobile payment.

3.4 Population

Polit & Hungler (1999) describe population as an aggregate or totality of all the objects, subjects or members that conform to a set of specifications. Data used in the study came from the mobile money users. The population was divided into two categories as follows: mobile money registered customers who have a utility account with ESCOM, BWB or Multi choice Malawi; and, utility service providers that include ESCOM and BWB.

Customers provided useful information about mobile payment in utility bills and how satisfied they are with the payment services. Service providers delivered information on how linked they are with mobile network operators and other stakeholders, and how they render their service to customers. The service providers also conveyed information on the benefits and challenges they have incurred since the adoption of the mobile payment.

3.5 Sampling Techniques

3.5.1 Sample Frame

A sample frame is a list of members of a population from which members of a sample are then selected (Rubin & Babbie, 2009). This research involved the utility companies that initially adopted the mobile payment in Blantyre. The companies within the frame were Blantyre Water Board, Multi Choice Malawi and ESCOM. The frame also included customers who have an account at any of the three mentioned companies and have registered with mobile money service providers. Lastly, the sample frame included intermediary companies that are involved in the mobile payment. It was, however, not easy to get in touch with the companies hence the researcher only concentrated on customers and service providers' companies. The intermediary companies are TNM, Airtel, and the bank of interest in this study is National Bank.

3.5.2 Sampling and Size

Kothari (2006) defines sample as a collection of some parts of the population on the basis of which judgment is made. Sampling deals with selection of the population that would involve a great amount of time and resources to provide valid ideas of the study. There are two types of sampling: probability sampling and non-probability sampling. Probability sampling is a method which uses techniques in selecting respondents while non-probability does not use any technique in respondent selection. The respondents were selected accidentally (through reference from other respondent) hence it followed a non-probability sampling method.

Since mobile payment is quite a new system in Malawi, identifying customers was not easy. Thus, snow ball sampling technique was used to identify customers who use the mobile payment in Blantyre city. Snowball sampling as defined by Gallardo (2008) is the method of asking study participants to make referrals to other potential participants, who in turn make referrals to other participants, and so on. The research therefore identified one known customer who registered with mobile money. The first customer then identified another customer whom he knew, and that customer also identified others until a sample size was reached. Customers who are registered with mobile money service providers but do not use it were also purposively interviewed to know why they were not using the service despite having the mobile payment registered service. A total number of 51 customers were selected for study purposes to represent the whole population. A representative from 2 of the utility companies was interviewed. The small number selected is therefore referred to as a sample.

3.6 Data Collection Procedure

Collection of data for the study was done in a period of 6 months (from December 2015 to May 2016). During the study, primary data was collected using face-to-face interviews, participatory and informal observations. Interviews were also used to collect data from ESCOM and BWB. In order to gather in-depth knowledge from both customers and service providers, semi-structured interview questions were used. A set of questions were designed according to the type of the respondent, that is, customers had their own interview questions and so were the service providers (refer to appendix 1 and 2). The researcher also registered with Mpamba and participates in utility bill payment to observe

the mobile payment process. Customers were informally observed at different utility pay centre points and at the National Bank mobile payment sections. Finally, the researcher observed what customers were doing when paying for utility bills using mobile payment services on her mobile phone.

The researcher did not use secondary data because customer satisfaction mainly looks at the current situation on how the system is performing.

3.7 Data Collection Instruments

3.7.1 Semi-Structured Interviews

A semi structured interview approach was one of the tools used for data collection. The researcher formed a set of questions guided by the research objectives and the theoretical framework in order to address the key themes rather than specific questions. Semi-structured interviews were chosen to give the researcher room to improvise questions outside the predetermined ones during the interview (Myers, 2007). A non-standardized open-ended interview was conducted where a set of questions guided by an interview guide (refer to Appendix 1) were asked to different respondents according to their level of knowledge. An interview guide was designed to allow the researcher not to lose focus when doing an interview with a respondent. The researcher intended to interview mobile network operators and National Bank of Malawi Company to understand further the mobile payment process but was not successful. Nevertheless, the researcher was successful to interview customers and utility company service provider. The interviewees were grouped into 2 categories—customers; and service providers. Each group had a set

of its own questions. Customers were asked their level of knowledge and satisfaction on mobile payment for the utility bill and also factors that led them to use the mobile payment other than cash or cheque.

Interviews were audio recorded and then at the end of each interview, the researcher transcribed the interview and developed the themes and codes before going to the next interview. This enabled the researcher to develop new themes at each interview point. Interviews were continuous until the researcher discovered that no new themes were developed from the new coded data. According to Camic & Yardley (2003) this point is called saturation point because the research has reached the redundancy stage where no new theme is discovered.

A total of 51 customers were interviewed. Service providers were asked whether the mobile payment has positively helped their organisation. Service providers were also asked on how they help customers who are facing challenges with the mobile payment. Two interviews were done from the two companies of the utility service providers. Each respondent was representing the company. The researcher interviewed one employee from the mobile payment section.

The semi-structured interview was chosen because it gives room to the interviewee to explain more on the research subject. At the same time, it allows a certain degree of flexibility for the researcher to respond to the answers of the interviewee and therefore develop the themes and issues as they arise.

3.7.2 Observations

Observation was one of the data collection tools in which the researcher observed an ongoing behaviour without involving any interview. Observations can either be participant or non-participant. DeWalt & DeWalt (2002) define participant observation as the process of learning through exposure to or involvement in the day-to-day or routine activities of participants in the researcher setting. Non-participant observation, on the other hand, is the type of research in which there is no intervention by the researcher.

Participant observation allows the researcher to intervene in the research environment in order to know and understand thoroughly the area of study in its natural setting. It enables the researcher to gather data on what is currently happening in the field of study. During the study, the researcher used formal participant observation by registering with Mpamba in December 2015 and started paying for utility bills monthly. The researcher also informally observed on the payment processes and how the service providers are handling the complaints at the National Bank (Mo626ice section) and also at different pay centres. During the observation, the researcher had a checklist form adopted from the interview guide.

3.8 Validity and Reliability of Data

Data validity and reliability are critical elements in data collection. To ensure the validity and reliability, the researcher concentrated on richness (quality) and thickness (quantity) of data rather than the size of the sample (Dibley, 2011; Burmeister & Aitken, 2012). To enhance the reliability of results (Stavros & Westberg, 2009), data was collected and analysed using multiple methods, and was collected from different people, time and

space. This formed data triangulation that provided quality and quantity data. Denzin (2006) define triangulation as a method in which the researcher must learn to employ multiple external methods in the analysis of the same empirical events. To ensure that data collected was rich and thick (Dibley, 2011), interviews to customers were done to different level of people, interval and space.

3.9 Data Analysis and Interpretation

Data collected was deductively and inductively analysed using the framework analysis technique by firstly classifying it into meaningful categories in relation with the research objectives, and also guided by the Expectancy Disconfirmation Model (EDM) identified in the chapter on literature review.

Williams (2007), defines deductive data analysis approach as the way in which the researcher uses research questions to group the data and then look for similarities and differences in the responses, and inductive approach involves the researcher using the framework to group the data and then looking for relationships in the responses.

At the end of each interview, audio recording was transcribed into a text file. Transcribed data was then categorised according to the research objectives and the theoretical model. Data was categorised and assigned to themes that were identified during the data categorisation. Themes were assigned with short codes that were used in the NVivo software analyzing tool. Data collection and data analysis were done concurrently, and it was easy to identify the themes. Customer satisfaction level was measured based on the

standard of 4-point Likert scale ranging from “very satisfied” to “dissatisfied”. The scale was attached at the end points ranging from 1 as very satisfied to 4 as dissatisfied. Since Likert scale was used in measuring customer satisfaction level, data was coded in NVIVO in which it was treated as an interval by assigning a value to each of the levels which were attached to the end points.

3.10 Ethical Approval

At the beginning of each interview, the researcher asked the respondent for permission to be interviewed. A consent form was given and signed for by the respondent as an agreement that s/he has accepted to participate in the interview. Interviews and observations were anonymous as no names were captured.

For the utility bill companies (ESCOM and BWB), the researcher booked an appointment first to seek an approval before the interview. The researcher had an introductory letter (from the supervisor) that was given to utility bill companies before conducting an interview. Utility bill company’s representatives signed a consent before the actual interview.

CHAPTER 4

RESEARCH FINDINGS AND DISCUSSIONS

4.1 Introduction

This chapter firstly presents findings from the research methods employed in this study. These findings centred on evaluation of customer's choice on the type of payment system, and was done through interviews guided by the research objectives and the conceptual framework. The chapter also discusses factors that contribute to customer satisfaction with the mobile-based payment system guided by the conceptual framework.

4.2 Findings

The findings of this study was presented in three parts. Firstly, the study presented utility bill payments, then customer satisfaction level and lastly factors that contributes to customer satisfaction and dissatisfaction in Malawi.

4.2.1 Utility Bill Payments in Malawi

i. Utility Bill Payment Methods

Utility bill payment in Malawi is done either by counter service or mobile payment systems as discovered by the NPS 2008 report. The study however found that counter service payment system is the type of payment where a customer has to physically go to the pay centre point to execute the payment. Counter service pay point includes payment

of bills through the bank where a customer uses either cash or cheque; payment through utility service provider's offices; payment through the defined utility bill pay points such as filling stations, Chipiku Stores and People's Supermarkets; and payment through ATMs. On the other hand, mobile payment is the type of payment that uses a mobile phone registered for the mobile money service. Table 2 summarises payment method of utility bills in Malawi.

Table 2 Utility bill payment mode in Malawi

PAYMENT METHOD	TYPES	EXAMPLE
Payments at a Counter	Payments at a Bank	DSTV, Water board, ESCOM through National Bank, FMB
	Payments at Utility Provider Offices	Payments at DSTV, ESCOM and Water board offices
	Payments at Auxiliary Pay points	Payments for ESCOM bills at Total Filling Stations, Chipiku and PTC Stores
Mobile Payments	Payments Connected To Banks	NB Mo626ice, NBS Easy Mobile, FMB Mobile.
	Payments Connected to Mobile Service Providers	TNM Airtel Money

ii. Mobile Payment Platforms

It was established that mobile payment platforms in Malawi are grouped into two categories: mobile payments platforms offered by banks linked to a customer's bank account, and mobile payment platforms offered by mobile network operators linked to a customer's mobile number. Mobile payment platforms offered by banks include Mo626ice by National Bank of Malawi, Easy Bank by NBS Bank, and FMB Mobile by

First Merchant Bank. On the other hand, TNM Mpamba offered by TNM, and Airtel Money by Airtel are examples of mobile payment platforms offered by mobile network operators. Of these five platforms, Mo626ice, TNM Mpamba and Airtel Money are the most dominant and therefore the main focus of this study.

It was also noted that there are two different approaches in updating customers' accounts that have made payment through the mobile. For customers that pay through Mo626ice, updating is done between the bank and the utility service provider. The study discovered that at the end of each day, the utility service provider pulls a file from the National Bank server and updates the customers' record into their system. While for mobile network operators (Mpamba and Airtel Money) the update is done through Malawi Switch Center (Malswitch) where they first change the payment file format from the network operator to the required service providers' file format.

iii. Customer Usage of Utility Payment Methods

Based on the findings, out of the 51 respondents interviewed during the study, 38 were registered on more than one mobile payment platform, and the other 13 were registered on one mobile payment platform. Table 3 summarises this distribution of respondents across the three mobile payment platforms.

Table 3: Mobile payment platform used

UTILITY BILL PAYMENT MODE	NUMBER OF RESPONDENT	PERCENTAGE %
Airtel money only	6	12
Counter Service only	4	8
Mo626ice only	21	41
Mo626ice and Airtel Money	1	2
Mo626ice and Mpamba	2	4
Mo626ice, Airtel Money, Mpamba	2	4
Mpamba only	14	27
Mpamba and Airtel Money	1	2
Grand Total	51	100

Customers registered on more than one mobile payment platforms have the opportunity to choose the most convenient platform to use for a particular utility platform. Of all the services used by the respondents, Mo626ice was found to be the most widely used as shown in table 3 above. On this, one respondent had this to say:

I mostly use M0626 because it is directly linked to my bank account and I do not have to struggle with topping up through an agent.

Currently, there are three kinds of utility bill payments available on the mobile payment platforms: Satellite TV Subscription (DSTV and GoTV), Water bill payments and electricity bill payments. A customer can pay for all three kinds of bills using one mobile payment platform or use different platforms for different bills. For example, one respondent stated that he/she is registered with Mo626ice, Airtel money and Mpamba but

chooses to pay electricity using Mo626ice and pay GoTv using Mpamba. The respondent had this to say:

I registered to Mpamba, Airtel money and Mo626ice. I always use Mo626ice for utility bill payment and use Mpamba for GoTv because there is no option for GoTv in Mo626ice.

Other respondents use all of the three mobile payment system (Mo626ice, Mpamba and Airtel Money) for payment of all the three bills (water, electricity and DSTV subscription). On this, one respondent observed: *I am registered to all the three mobile payments and I enjoy using all of them.*

From the 51 respondents, a total of 99 recent utility bill payments were identified. This was the case because some respondents had made multiple payments using one or more mobile platforms. Table 4 summarises the distribution of utility bill payments identified using the mobile payment.

Table 4: Utility payment mode

MOBILE PAYMENT SYSTEM	NUMBER OF UTILITY BILL PAYMENTS	PERCENTAGE %
Airtel money	15	15
counter Service	11	11
Mo626ice	44	45
Mpamba	29	29
Grand Total	99	100

The number of utility bills made using mobile payment platforms varied across utility services with electricity bills having the highest number of mobile bill payments. Out of the 99 mobile utility bill payments, 50 % were for electricity while water and Satellite TV Subscription (DSTV and GoTv) had 25 %payments each. Table 5 summarises the distribution of mobile payments by utility bill type.

Table 5: Utility bill payment frequency

UTILITY TYPE	NUMBER OF PAYMENTS	PERCENTAGE %
Satellite TV Subscription	25	25
Electricity	49	50
Water	25	25
Grand Total	99	100

In addition to utility bill payment, all three mobile payment platforms (Mo626ice, TNM Mpamba and Airtel Money) offer several other services including airtime top up, and sending and receiving money. As a result, some respondents who pay their utility bills on the counter had instead subscribed to the mobile payment platforms to access these other additional services. These respondents prefer using the counter based payment system when it comes to utility bill payment. For example, one respondent said:

I registered with mobile money just to send money to my mother who is in the village. If I want to pay for utility bills I go to service provider's pay center or at the bank.

On the same issue, another observed: *I have Mpamba account but I use it just for buying airtime.*

Among the respondents, mobile-based utility bill payment was therefore found to be the most commonly used utility bill payment method. Furthermore, among respondents who paid their utility bills using mobile payments, Mo626ice was found to be the most widely used mobile payment platform.

4.2.2 Customers' Level of Satisfaction with Mobile-Based Utility Bill

Payment

Customer satisfaction with mobile-based utility bill payment was evaluated at three levels: the process involved (registration, top up and payment processes); the product overall; and fit between customer expectations and actual performance of the payment systems.

i. Customer Satisfaction with the Registration Process

All the respondents observed that the first step in mobile bill payment is to register with the mobile money service provider. It was learnt that registration for Mpamba and Airtel Money as done by the agents where customers were asked to provide an identity card and were asked details related to mobile money online registration form, while with the Mo626ice, customers had to fill hard copy registration form first (refer to Appendix 4) and submit it to the bank for them to be activated in the Mo626ice system. The study revealed that Mpamba and Airtel Money registered customers were activated as soon as the agent finished the registration process, while in Mo626ice, registration was done by the bank clerk after the customer has submitted the form. On Mo626ice, the researcher discovered that activation of the customer's registration was not instant as registration

was not done on the same day (that a customer submitted the form) or not to the same branch to which a customer had submitted the form.

All the respondents rated how satisfied they were with the registration process and out of the 51 interviews, 63 % of the respondents were just satisfied with the whole registration process, 20 % were somehow satisfied and 17 % were very satisfied with the registration process. Table 6 below, shows the frequency distribution and the percentage of responses based on registration process using the 4-point Likert scale (starting with 1-very satisfied, 2-Satisfied, 3-Somehow Satisfied, and 4-Dissatisfied)

Table 6: Registration process satisfaction level

REGISTRATION PROCESS SATISFATION RATE	NUMBER OF RESPONDENTS	PERCENTAGE %
Very satisfied	9	17
Just Satisfied	32	63
Somehow satisfied	10	20
Dissatisfied	0	0
Grand Total	51	100

It was established that the 20%of the respondents that were somehow satisfied were affected by the delay in the mobile money activation period. All the 20 %respondents expressed that they had waited for over a month to start using the mobile payment after they had submitted the registration forms to the bank. One respondent remarked:

Registration process was too long and I waited for over a month for me to start using Mo626ice. (Respondent for Mo626ice registered only)

For M0626, Registration took time (waited for over 2 weeks) and was told later that I had to re-register because my registration form went missing while for Mpamba and Airtel Money, it was instant. (Respondent who registered to all the mobile money services)

The study revealed that Mpamba was not compatible with some mobile phones such as HTC. Customers with HTC type of phones were told to bring other kinds of phone if they wanted to use Mpamba, because of the nature of the phone. On this, a user of HTC phone had this to say:

When I went for Mpamba registration, I was told that my Mobile phone was not compatible with Mpamba service. I was using HTC and I was told to bring another phone for Mpamba registration. I had to find another phone that is compatible with Mpamba.

However, this information seems to sound not credible, as TNM Mpamba is both USSD and SMS-based and therefore compatible with any phone type. The study also established that sampled customers who registered with the network operators (TNM and Airtel) were all satisfied because the activation was done soon after the agents finished the registration process. 80% of the network mobile registration was done by the mobile agents, and 20% was done by mobile network officers. In both instances, customers were happy with the registration process and the help they got from the agents. Mpamba and Airtel Money customer said:

I was extremely satisfied with registration process, especially for Mpamba and Airtel Money, the agents were there to help me and registration was pompo pompo (instant).

ii. Customer Satisfaction with the Top up Process

The registration process is followed by the top up process. This is the act of making funds available to the mobile platform. Customers must have money on a chosen mobile platform before they can pay for their utility bills. For customers with bank-based mobile payment platforms such as Mo626ice, there is no need for topping up since their mobile money account is directly linked to their bank account. As long as there is money in their bank account, they can make payments. On the other hand, customers using payment platforms linked to mobile network operators such as TNM Mpamba and Airtel Money, use an agent to top up their mobile account. It was learnt that for a customer to top up, he/she needs to travel to where the agent is and do the topping up.

On topping up through the agent, it was noted that in most cases, customers wait for too long for their account to be credited and sometimes the topping up menu is not available when a customer wants to do the topping up (in cases when a customer has the money already in the phone).

iii. Customer Satisfaction with the Payment Process

It was learnt that there are steps that are followed in the payment process. Customers who use Mpamba and Mo626ice reported that the steps in bill payment are simple and straight forward to use because they provide an interface that asks them to choose the available choices on the mobile payment (refer Appendix 3), while in Airtel money the customers expressed that the interface is difficult to interact with since it asks the users to type in the details like account number and bill type. Customers felt that they are prone to making a

mistake, and they reported that it is difficult to clear up a payment mistake. A respondent who is registered to all the three mobile money said:

Mpamba and M0626 is simple and fair, while Airtel money, the interface is challenging for example they ask you to enter name instead of just listing down the names and you choose.

With the actual payment process, the study established a number of challenges faced by the mobile payment. The first challenge noted was unavailability and instability of the mobile payment network service. Then there was the problem that came because the customer was able to login into the mobile payment but not allowed to do the payment process or sometimes the customer would not even able to log in into the mobile payment altogether because of the network instability. In some cases, it took time to be updated in the service provider account when the payment had been done, and also it took time to receive the token number when a pre-paid bill had been made. Further, it was noted that it took time to receive the reference number, since sometimes it came in bits and customers easily lost them. Lastly, in some cases, the customers got disconnected in the process of the making a payment.

All the respondents complained about system network disruption in the mobile payment process. It was however noted that customers had quality service expectations when they were registering, topping up and even doing the actual payment.

The study revealed that the challenges were mostly felt after the customers had compared what they expected the mobile payment to do and what it was actually doing on the ground.

iv. Customer Overall Satisfaction With Mobile Payment

All the respondents showed that they are able to pay for the bills using the mobile payment. It was, however, noted that satisfaction level with the mobile payment as a product differs depending on how the customer experienced the payment process. Out of the 51 interviews done, 2 % of the respondent indicated that he/she was very satisfied; 65 % rated the mobile payment as just satisfying; 29 % rated mobile payment as somehow satisfied; and 4 % rated the mobile payment with a dissatisfied sentiment. It was learnt that customers who were dissatisfied did not successfully pay their bills using the mobile payment because of the system unavailability, and also because it had taken them time to receive the electricity token number when they had paid their pre-paid electricity bill. Table 7, shows the frequency distribution and the percentage of responses based on mobile payment as a product using the 4-point Likert scale (starting with 1-very Satisfied, 2-Just Satisfied, 3-Somehow Satisfied, and 4-Dissatisfied)

Table 7: Satisfaction rate for mobile payment as a product

MOBILE PAYMENT SATISFIED	NUMBER OF RESPONDENT	PERCENTAAGE %
Very satisfied	1	2
Just Satisfied	33	65
somehow satisfied	15	29
Dissatisfied	2	4
Grand Total	51	100

v. Service Quality Expectations and Actual Performance

The researcher assessed both the quality service expectations against the perceived performance of the system. The expectations were then listed against the perceived performance of the mobile payment. Table 8 a, b and c summarises the expectations against the perceived performance.

Table 8a: Expectations versus perceived performance

EXPECTATIONS	PERCEIVED PERFORMANCE
• Be able to pay bills using mobile payment.	• Able to pay bills using mobile payment mode.
• Avoid queue hustles experienced in the counter based payment system.	• No more queuing when using mobile for bill payment.
• Pay bills electronically at any time.	• Able to pay bills when the mobile payment service is available.
• Pay bills from anywhere	• Able to pay for bills from any location.

Table 8b: Expectations versus perceived performance

EXPECTATIONS	PERCEIVED PERFORMANCE
• Save transport money	• Saves transportation money; no need to physically walk to the pay centre since payment is done from where one is.
• Keep money safe in the phone	• Money is kept safe since the mobile money asks for the pin code each time one wants to access it.
• Be able to access and use the mobile payment whenever there is a need.	• Mobile payment is not always available for the bill payment. It is faced with a lot of down time period
• Buy airtime	Able to buy airtime even for other people
• Should not take too much time when paying for bills.	• Paying using mobile payment does not take much time. It is less than 5 minutes and the process is done.
• Complete the payment process without experiencing system interruption.	• Sometimes you get interrupted in the payment process.
• Access the bill payment service even outside working hours	• There is no restriction on time because payment is open 24 hours
• Be able to get receipt (hard copy) for payment confirmation when the payment has been made.	• Not able to get a hard copy receipt as a proof of bill payment. The receipt is generated in form of message and it is easy to lose it

Table 8 c: Expectations versus perceived performance

EXPECTATIONS	PERCEIVED PERFORMANCE
• Utility account updated as soon as the payment has been made	• Utility bill account is not updated instantly hence customers face service disconnection even if they have paid the bill in full.
• Check salary payments and any other financial transactions	• Able to check salary payment and all financial transactions through the bank account
• Be able to transfer funds and do financial transaction anytime	• Able to transfer money to any bank and also pay for other people's utility bill.
• Had no expectations, was just adopting to the technological change	• Able to transact financial services through mobile phones.

4.2.3 Factors that Contribute to Customer Satisfaction

Apart from finding out the mode of bill payment which customers are mostly using and the satisfaction level on the mobile payment, the researcher's intention was also to find out factors that satisfy mobile payment users. The factors have been grouped into two categories: internal factors (those that are felt directly by customers and are under the control of service provider), and external factors (those providers have no control over). The table 9 summaries contributing factors.

Table 9 Customer satisfaction categories

CONTRIBUTING TYPE	CUSTOMER SATISFACTION FACTOR
Internal	Service quality
	System Quality
	Information Quality
External	System Interoperability
	Outsourced mobile payment platform
	Network infrastructure
	Power cut

i. Internal Factors

Service Quality

Service quality was one of the important factors identified during the study. All respondents felt service quality was essential for the mobile payment because poor service quality decreases user trust and satisfaction on the system. The study revealed that service availability, reliability and customer care are the main pillars of the mobile service quality. Respondents observed that they expect the mobile payment to be functional and working with minimal downtime period. It has been established thus that customers are mostly affected by the long downtime period of the mobile payment. Respondents reported that the mobile payment is usually unavailable mostly during the end of the month. In most cases, it has been noted that the downtime of the mobile payment is mainly caused by the network instability of mobile payment service provider. It has been revealed that because of the network unsteadiness, customers fail to reach the

mobile payment, and in some cases, they get disconnected in the process of bill payment. One respondent who experienced a system interruption because of network instability expressed the following sentiments:

Network is a big problem, when you pay for utility bills it is not updated instantly (refer appendix 5) which sometimes leads to utility account disconnection even though the process was complete with mobile payment. Sometimes amount is deducted though the transaction was incomplete.

On mobile payment unavailability, it was noted that there are times when customers were completely denied access to the mobile payment service, and there were times when they were able to access the login page but not able to proceed to the payment process. One respondent stressed the point by saying:

There was a certain night that I desperately wanted electricity units but failed to buy because the Mpamba service was unavailable. I ended up sleeping without electricity although I had credit in my Mpamba account. I, then in the morning went to buy electricity units at BP filling station and that was instant. I therefore prefer buying or paying for utility bills using cash than mobile payment method.

It was discovered that system unavailability also affects system reliability since respondents stated that they expected a reliable mobile payment which is available, able to deduct the paid amount and update the account for the bill payment all the time. The respondents also reported that there were times when they had made a payment but their utility account was not updated, and they end up being disconnected despite paying their bills. Most of the respondents stated that despite the unavailability of the mobile

payment, there are still some factors that satisfied them and made them believe that the mobile payment is reliable. For example, some respondents explained that the fact that they are able to pay their bills when the mobile payment is available and is also able to deduct the right amount is a plus to the mobile payment. It was also noted that respondents who are registered to Mo626ice were happy with the service reliability as compared to customers who are registered with Mpamba and Airtel Money. It was discovered that Mo626ice is more reliable in terms of network performance than Mpamba and Airtel Money which has more downtimes. Some respondents registered on multiple mobile payment solutions, and they indicated that Mo626ice was more stable than the other services. The following sentiments by one respondents summarises this position: *Mo626ice is more reliable than Mpamba. Mpamba is usually not stable on network.*

Customer care was another element that was mentioned in the service quality. Respondents reported that the responses they get from the service providers affect their attitude towards the mobile payment. It was noted that mobile payment customers are not sure of where to report their complaints with the mobile payment issues. For example, it was learnt that some customers report to the network operators while others report to the utility service providers. The study disclosed that when a customer has reported to the service provider (ESCOM, Water Board and Multi Choice Malawi) they are asked to write a letter with details of their problem. The details include the day it happened, account number and phone number. If they pay to a wrong account, the customer is asked to give details of both wrong and right accounts. This is then submitted to service

provider where they trace and rectify the problem. It was also learnt that Electricity bill payment customers use the ESCOM website to query for their problems (refer appendix 6), especially when they have waited too long for the electricity token number or when they have lost their reference number. The study also revealed that Mo626ice customers report their queries by either filling in the forms at the Mo626ice customer care centre or contacting customer care through WhatsApp, Skype and mobile phone.

Some of the customers stated that it takes time for their issues to be resolved and others expressed worry that they never got response and help when they reported the issue to the service provider and therefore ended up giving up reporting.

System Quality

The study through the respondents found that system quality is another factor that contributes to customer satisfaction. The study revealed that customers depend a lot on system quality for them to be loyal and satisfied. All the respondents appraised mobile payment system quality as good hence were loyal to it. Respondents expressed satisfaction with system performance of mobile payment because they never experienced system slowness of any kind. Respondents concluded that the mobile payment operates at a normal average speed.

Another point that customers expressed was how they navigate through the mobile payment. It was discovered that Mo626ice and Mpamba customers had no issues when navigating through the mobile payment. The interface for the mobile payment was so

user friendly that one respondent stressed that it does not need one to be in class to use the system as even a novice can easily use the mobile payment facility by just following the instructions on the menu. However, all Airtel Money customers complained about how difficult it is to navigate through their mobile payment. It was discovered that Airtel Money asks customers to type information, like the type of service they want, and it is difficult for a user to properly type in correct information hence it was easy to make a mistake.

Information Quality

All the respondents expressed the need to have a relevant, accurate and timely information of the mobile payment. The study revealed that whenever a customer accesses the mobile payment, it always provides information related to the mobile payment bills and issues. For example, a customer who is paying for a water bill will be given information such as account number and name related to what he/she has chosen from the listed menu. Apart from the related information, it was also noted that information provided for the mobile payment is adequate enough for the payment. For example, users that are new to the mobile payment are able to follow the payment process because of the information given to them. One respondent explained that there is no way she could choose water bill and be provided with electricity information. She expressed her sentiments thus:

When I want to pay for water bill I first of all choose the payment option from the listed menu, then Mpamba provides a list of payments that are available within it and when I choose utilities, a list of bills is displayed.

There is no way I can choose electricity bill and be provided with a list of water boards.

Another factor that was learnt within the information quality was accurate feedback. All the respondents reported that whenever they had made a payment, they received accurate information through a message that is called payment reference. The message provides details of the amount of bill payment that has been made, the date and the balance of the bill. It was discovered also that each time a customer asks for a utility balance before the actual payment, the mobile payment is able to provide accurate balances for the bill.

Another important factor that was discovered during the study on the information quality was timely information. 32 out of the 51 respondents reported that they do not receive information on time. Respondents explained that they experience a delay in receiving the reference message and also update message on the payment they have made. Respondents highlighted that the payment reference notification message comes after an hour. Respondents who have pre-paid account for electricity stressed that it takes time to receive information about the electricity token number when they have used mobile payment. A respondent who has experienced the delay in receiving electricity token number said: *It takes time to receive the token number for electricity.*

The study has therefore revealed that right and accurate information is sent to the customers but usually not on time.

i. External Factors

System Interoperability

The research has found out that the mobile payment system that are provided by mobile network operators are not compatible and directly linked with customer account system in the utility bill companies as shown in figure 8. Payments made by customers through mobile network operators are sent to Malswitch; at the end of the day they format it to the required service providers format (see figure 8).

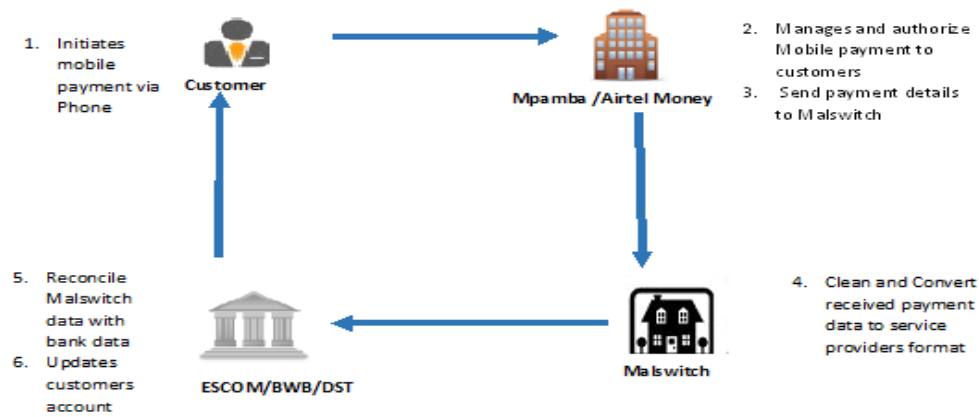


Figure 8: Mobile payment process in Malawi.

It has been learnt that mobile operators send all the successful and failed transactions, and Malswitch mostly does not clean the failed transactions; they only change the format to the requested. When the file is sent to the service provider, it has been learnt that sometimes they fail to reconcile with the amount of money that has gone to the bank, as a result, the utility service provider sends the file back to Malswitch to clean up. This process delays the customers' update account since it takes more than a day to clean up

and update. The delay affects customer satisfaction on mobile payment because they sometimes end up being disconnected even if they have paid the bills. One of the respondents from the utility service provider company said:

The mobile service is not connected directly to our server; it uses Malswitch platform as a result we mostly receive the payment details for the update late. Malswitch sends the pay list at the end of the day but if they delay it means updating is done the following day.

Another respondent expressed similar sentiments as follows:

It is difficult sometimes to reconcile the file that Malswitch has sent to us for the update with the one that has been paid for at our accounts. They usually send file with errors and it is difficult to follow. They send even failed transaction list.

Outsourced Mobile Payment

It has been observed that the mobile payment is not locally developed, and maintenance of the mobile payment system is done by external experts who developed the payment system. If there is a problem in the mobile payment, mobile providers do not fix it but wait for the supplied company to provide the solution since the local team is only there to provide support. This has been seen to affect the customers whenever they are stuck with the technical issue since it cannot be sorted out internally.

Network Infrastructure

The study, through observation, has disclosed that banks and mobile network operators do not have their own network infrastructure. It has been noted that it is expensive for them to have their own infrastructure hence they outsource it to Globe Networks which

use ESCOM fibre link. Whenever there is a network issue, it is beyond the mobile payment providers to fix it because they do not have a backup network infrastructure, and fixing it is done by network providers.

This has affected customers because at times when the fibre link is down, the mobile utility service providers fail to provide an alternative strategy to network support. Hence frustrating customers who desperately want to pay their bills through the mobile utility service provider.

Power Cut

It has been observed that the excessive power cuts mainly observed in 2016, have affected the availability of the mobile payment services to customers. The researcher has noted that most of the times when a customer wants to access the mobile payment service, it gives the “*connection problem or Invalid MMI code*” error. This error has been so frequent since the beginning of the extreme power cuts in Malawi. This has affected customers’ trust to use the mobile payment since most of the times the mobile payment is not available.

4.3 Discussions

The factors that contribute to customer satisfaction with the mobile-based payment system are discussed guided by the conceptual framework in figure 7 which is based on the expectancy disconfirmation theory (Yüksel & Yüksel, 2004), extended valence theory and concepts from the IS model (DeLone and McLean, 2003). The findings present a

detailed picture on whether customers are satisfied or not with the mobile-based payment system in the Malawi.

4.3.1 Expectations versus Perceptions

In Expectancy Disconfirmation Model (EDM), expectation originates from the brand experience, word of mouth or marketing communications (Peterson et al., 1993). Perception on the other hand originates from the various perceived service quality factors that a customer judges. In this study, expectations and perceptions on the mobile payment were compared first. As suggested by Halstead (1999), a comparison between expectations and perceived performance of a service forms disconfirmation and satisfaction judgments. In this study, the satisfaction level was defined after customers have experienced the system performance. Oliver (1980) pointed out that customer will most likely compare their expectations with actual service, purchase, or consumption they received afterwards. Based on the framework, the expectations and perceptions have variables that contribute to customer satisfaction level. The variables include service quality, system quality and information quality. The discussions in this chapter are based on these three variables. De Lone & McLean (2003) confirms that service quality, system quality and information quality have significant impact on user satisfaction. Within these variables, there were either positive or negative factors that contributed to customer satisfaction. Positive factors maximise customer level of satisfaction while negative factors minimise customer level of satisfaction. The finding of this study emphasise Parasuraman et al., (1988) empirical work which argued that “if the user expectations on the system matches with the actual performance of the system, a customer is satisfied,

and if there is a negative discrepancy between perceptions and expectations or ‘performance-gap’, customer dissatisfaction follows, and positive discrepancy leads to consumer delight and satisfaction”. In this study, customers had positive perception on utility mobile payment and most the expectations were met; and at the end, customers were satisfied. However Yüksel (2004) stated that it is possible to have some discrepancies between customer’s expectations and the actual system performance but if the difference is positive, a customer is satisfied. This confirms the study’s findings which showed that although there were some negative differences between customers’ perceptions and expectations, the differences were minimal to decrease the trust and use of mobile payment hence customers were satisfied. Table 10 summarises the degree on how expectations were met.

Table 10 Expectations check

EXPECTATIONS	EXPECTATIONS LEVEL
Able to pay Bill electronically	✓
Avoid queues	✓
Pay bills at anytime	☑
Pay bills from anywhere	✓
Save transport money	✓
Keep money safe in the phone	✓
Able to access and use mobile payment	☑
Takes less time to complete payment process	✓
Able to buy airtime	✓✓
No system interruptions	☑
Get payment receipt confirmation	✗
Immediate account update	✗
Able to check salary	✓✓
Able to transfer money	✓✓
Adopting technological change	✓✓

Hint:

- ✓ ✓ Expectation was beyond met
- ✓ Expectation was met
- ☑ Expectation was partially met
- ✗ Expectation was not met

4.3.2 Factors That Affect Customer Satisfaction

De Lone & McLean's (2003) work revealed factors that influence customer satisfaction in e-commerce as service, system and information quality. In this study, customer satisfaction in mobile payment contributing factors were discovered and the factors were grouped accordingly. Table 11 summarises them.

Table 11 Customer satisfaction factors

SATISFACTION DETERMINANTS	CONTRIBUTING FACTOR	EFFECT
Service quality	No queues	Positive
	Time saving	Positive
	Reduce risk of money loss or theft	Positive
	Saves transactional and transportation costs	Positive
System quality	Correct bill update (Efficiency)	Positive
System quality and information quality	User friendly (usability)	Positive
System quality	System unavailability	Negative
	Network instability	Negative
	No hard copy receipt	Negative
	Late account update	Negative
	System Interoperability	Negative
	Network infrastructure	Negative
	Power cuts	Negative
	Outsourced mobile payment	Negative

i. Internal Factors

Service Quality

Respondents in this study were contented with the issue that they no longer queue when they want to pay utility bills. The introduction of mobile payment has also helped utility service providers in decongesting of queues in the utility bill pay points though not at all times. It has been noted that queues still exists especially month ends. The findings indicated that customers who at once successfully pay bills on mobile payment use mobile payment method for the utility bill payment while those that failed to successfully pay the utility bills on mobile payment due to network instability or unavailability of the mobile payment platform opt cash based payment hence the persistence of queues in different pay points.

In service quality, time saving was another factor that contributes to customer satisfaction. According to the study's findings, customers who were doing mobile payment were satisfied with the service as they do not need to travel and do the utility bill payment transactions. Customers do not waste time travelling or waiting when they want to pay utility bills. This agrees with the discussion in the Forrester Research, (2001) which states that many customers prefer using mobile systems to walk in services as they spend less time and effort in paying their bills. Customers expressed that it was more convenient and satisfactory to use mobile payment as far as time saving is concerned.

Security was another contributing factor in mobile payment that maximizes trust and customer satisfaction in mobile payment. Customers trust the mobile money and feel it

more secure to pay bills using mobile payment than carrying actual cash to the pay point centre. In mobile payment, customers use the money that is safely kept in the phone and whether they want to access the mobile payment platform, they are asked for a PIN code. This concurs with the study by Mas & Ignacio, (2009) which found that customers trust the mobile money service as cash stored in mobile phones is more secure and easy to access. Trust that is produced because security promotes customer satisfaction in mobile payment.

It could also be argued that one of the factors that contributed to customer satisfaction in mobile payment was the transport and transactional cost that was not directly involved in the mobile bill payment. The cost involved in the payment process was reduced because customers do not need to travel to the pay point to do the bill payment transaction. The transactional cost involved in the mobile payment is minimal as compared to the cost involved in the counter service. For example, with counter service, a customer can use a minimal amount of K300.00 for transport money while mobile payment transactional cost according to Mpamba and Airtel website is K50.00 and K100.00 respectively. Cost cutting agrees with Mallat (2007) study which explores consumer adoption of mobile payment which found that the transactional cost of a mobile payment has a direct effect on customer adoption and satisfaction on the mobile payment. He claims that customers are satisfied if the transactional cost is included in the bill payment process unlike charging them, and if the cost is affordable. Customers in this study were satisfied with the cost involved in mobile payment as they do not use any money for transport to the

pay centre and also they do not feel the transactional cost because it is directly charged to the mobile payment.

This study also found out generation of a hard copy receipt as part of payment approval to be one of the critical factors in the mobile payment. Customers expect that they should also be able to print reference SMS they receive on the phone after the utility bill payment. This could be used as a reference in cases where the SMS has been auto deleted due to low memory space of the phone. It has also been noted that sometimes the technician come to disconnect when there is no proof that payment has been made. This negatively affects customers satisfaction, as they expect to have a reference message or copy to show the utility service provider in cases where they are disconnecting the service. This agrees with a study by Chale & Mbamba (2014) where they were assessing the role of mobile payment service in the growth of small and medium enterprises in Tanzania, and it was discovered that one of the challenges that SME customers were facing was the fact that mobile payment users are not able to get a receipt in hard copy for reference when using mobile money.

Customers therefore prefer to use cash in their payment rather than mobile, as cash produces hard copy receipt. This shows that it is easy to produce and convince a utility service technician with a hard copy than with SMS reference which are in bits and pieces or they are automatically deleted due to low memory space.

According to the study results, late account update is one of the factors that reduce customer satisfaction levels. The findings indicated that mobile payment system delays to update customer's utility account after making a payment. In some cases, customers were disconnected despite payment being made. This study revealed that such customers tended to lose trust in the mobile payment due to the late account update. Mbogo's (2012) study discovered that account update was a major factor in customer evaluation of service quality which determined their satisfaction on M-PESA. Zhao & Saha (2005) noted that timeliness or responsiveness of mobile payment transactions were crucial in the service quality in internet banking and largely influenced customer satisfaction in Lulea, Sweden. The study findings also showed that customers were not sure where to report their complaints when they have encountered a challenge during the payment process. It has been clearly noted that mobile payment involves more than one part; that is the mobile network operator, utility service provider and the bank. Pousttchi, (2003) confirms that mobile payments are channeled through three stages, from the customer to the mobile payment platform provider, then to the clearing bank and lastly to the utility service provider and it is easy for a customer to abandon the mobile payment if they are not aware on where to report their mobile payment. In agreeing with his study, this study showed that customers were dissatisfied with the customer care service from mobile payment service providers because they were not sure on where to report their complaints. In most cases, it took so long for the service providers to sort out customers' complaint.

Based on the service quality discussions, the study indicated that customers in mobile payment anticipated that their experience with the mobile service quality performance is exceeding their expectations and this gives an impression that customer are satisfied with the service they receive in mobile payment.

System Quality

In system quality, efficiency is one of the five attributes that contributes to customer satisfaction (Nielsen 1993). The findings of the study support that system efficiency contributes to customer satisfaction as it was discovered that mobile payment utility platforms always accurately update the customers' utility accounts when a mobile payment has been made.

This study also acknowledges the relationship between mobile payment ease of use and customer satisfaction. The findings of the study revealed that customers in the M0626 and Mpamba were more satisfied than Airtel Money customers because of the steps that were involved in the bill payment. An ease of use system increased the intention to use the mobile payment and also the satisfaction level. The study concurred with earlier observation that ease of use has a direct effect on perceived usefulness and the two are likely to determine the user's attitude towards use that is behavioral (Viehland & Leong, 2007). As evidenced by Davis's, (1989) study on IS Model, the study results reveal that perceived ease of use of a mobile payment has a positive influence on customer satisfaction.

System unavailability was one of the major factors that negatively affected customer satisfaction level on the mobile payment. The study has shown that customers always expect the mobile payment service to be available whenever they initiate the payment process. System availability increases customer's trust and interest on the use of mobile payment. As Mallat (2007) stressed in his study, system availability is one of the major pillars that attracts customer satisfaction in mobile payment.

The growth of mobile payment is affected by network connectivity and performance. Customer satisfaction with mobile payment depends on the consistency of the network performance and dependability. Unstable network pulled customers down on the usage of mobile payment as network performance is one of the major factors that contribute to system quality in mobile payment. The study revealed that mobile payments in Malawi are greatly affected by network inconsistency and connectivity and customers' satisfaction level is greatly affected with the network connectivity and performance issue. The result is in tandem with that by Ndunge & Mutinda (2012) who outlined that M-PESA in Kenya is challenged with network or connectivity problems that also affect customer adoption and satisfaction rate. In relation to this, Mas & Radcliffe (2011) identify network effects as one of the characteristics why mobile payment systems struggle to achieve scale incrementally. Mas and Radcliffe revealed that unstable network is affected by a number of factors that include network infrastructure and the number of people that access the mobile payment service at a time. Blinco et al. (2004) also concur that networks and connectivity are almost universally assumed to be critical to the development of successful IT infrastructure. Davidson (2012) discusses the implications

of network performance on mobile money in which it was discovered that customers in mobile money are affected by the performance of network connectivity. The study at hand agrees entirely with these studies because if there is no network on the mobile payment system, customers can not access and use it.

Generally, based on the discussion above, the study concluded that system quality was good and customers were satisfied with the performance and functionality of the mobile payment.

Information Quality

The study's results show that mobile payment platforms provide clear and easy to follow instructions to mobile payment customers. Clear information forms assurance and trust in customers that they are doing the right thing which at the end increases satisfaction level. The findings agrees with Yeng (2007) research in mobile banking which shows that customers found it easy and are satisfied with the mobile banking because they are provided with clear information on how they can do the mobile banking.

Information relevance and accuracy is another factor that contributes to customer satisfaction with the mobile payment. Customers had trust in using the mobile payment because they are always provided with relevant and accurate information each time they ask mobile payment service provider. This is supported by Kim et al. (2004) findings, it was noted that relevant information of a mobile payment affects the initial trust of a

customer that leads to customer loyalty and positive word of mouth to other people not using mobile payment.

Again, it was discovered that customers are provided with complete information when they ask from the mobile payment platform. This increases trust and satisfaction level of customers using the service. Palmer's (2002) study also discovered that information which is complete satisfies customers.

The study findings discovered that customer satisfaction are mostly affected by response time of a mobile payment when they asked for a service like utility bill balance and utility top up voucher. This compliments Jaiswal's (2011) findings as it was stated that provision of late information affects customers as they usually ask the information when they want to do the transaction and it is important to have a real time system that provides timely information.

Customers in mobile payment were satisfied and trusted the quality of the information they get in mobile payment. Despite the late information update, customers were more satisfied with the complete, accurate and relevant information.

i. External Factors

System Interoperability

Findings to this study lead to a conclusion that there were also hidden satisfaction factors that transpire between mobile payment service providers like TNM Mpamba and utility bill companies like ESCOM but they affect the customers. The findings discovered that

mobile network operators, utility service providers and banks use different platforms for the reconciliation of bill payment. The results indicated that reconciliation between mobile network operators and service providers payment transactions was done at Malswitch because these two organisations use different payment system that are not compatible.

Malswitch (Malawi Switch Centre) is an organisation that integrates business technologies from different companies with the core activities of electronic payment, information technology infrastructure and data communication services. The company background originates from its establishment as a project of the Reserve Bank of Malawi in 1999 (Malswitch, 2016).

The process of changing data format delays the account update since in most cases there are some data that need to be cleaned. The delay affects customer satisfaction level as customers were disconnected to the utility bill service even where they had paid for it. This agrees with Turban et al. (2002) study which revealed that system interoperability is a hidden crucial factor that determines the widespread acceptance and satisfaction on the payment system by users.

Network Infrastructure

Network infrastructure was also one of the contributing factors to customer satisfaction in the mobile payment. The study revealed that mobile payment providers do not own any network infrastructure. Network infrastructure is outsourced, and if they have a problem,

they wait for the network infrastructure company to fix it. The delay in fixing the network service makes the mobile payment unavailable hence inconveniencing customers when they want to access it. Balan et al.'s (2009) study confirms that mobile money for mobile payment requires network infrastructure support from the mobile network operators and it is difficult to maintain if the network infrastructure is outsourced.

Outsourced Mobile Payment Platform

The findings in this study reveal that the mobile payment platform is outsourced and is managed by a subcontracted company and not the company that is actually offering the service. When there is a technical fault, the service provider waits for the outsourced company to fix it.

Lastly the result showed that electricity power cut in 2016 has brought about a great negative impact on the availability of mobile payment as customers were failing to reach the mobile payment.

4.3.3 Customer Trust

The findings indicated that good system quality stimulate trust and entice more mobile payment customers. Customers' trust in mobile payment promoted satisfaction level because their belief and intention to successfully pay utility bills using the mobile were fulfilled. This is in line with McKnight & Chervany, (2002) which stated that trust can be viewed as trusting belief and intention to use the system. Customers who were successful in mobile bill payment were satisfied and at the end became loyal to the product brand and also spread positive word of mouth to other customers who were not

using the mobile payment. Kim et al. (2004) study showed that customer loyalty and product positive word of mouth is a consequence of customer satisfaction.

4.3.4 Customer Satisfaction

Customer satisfaction in this study was done using two approaches; first by assessing the processes that were involved in mobile payment and secondly by assessing the mobile payment as a product. This is supported by Parker & Mathew's, (2001) study which indicated that customer satisfaction can be assessed as a process or as an overall product. In both instances, customers had trust in using the mobile payment and were satisfied with the payment service. Based on the findings, customers' trust and satisfaction highly influenced loyalty, word of mouth and even marketing communications of a service provider on mobile payment. Customers recommended the mobile payment to others and had a positive belief that despite other hiccups like late account update and no receipt generation, they were conveniently able pay for their utility bills. This supports Dick & Basu's (1994) study which found that satisfied customers would recommend the service to others and become committed to the brand. Expectations were met and this upheld satisfaction level with the mobile payment.

4.4 Chapter Summary

This chapter presented findings and discussions of the study. Most respondents preferred to use mobile payment rather than cash. There are two types of mobile payments, namely payments through the bank platform; and payment through mobile network operator platform. Mo626ice is an example of mobile payment platform through the bank while

Mpamba and Airtel Money are examples of Mobile payment platforms through a mobile operator. Mo626ice was the most widely used method in bill payment. Generally, it has been found that customers using mobile payment are satisfied. However, it was discovered that satisfaction is affected by internal and external factors that originates from mobile payment platform providers. The satisfaction determinants positively or negatively contributed to satisfaction level on the use of mobile utility bill payment. The determinants were service quality, system quality and information quality.

CHAPTER 5

CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This chapter summarises the research findings, and presents conclusion and recommendations. Based on the main objective, the study evaluated the extent of customer satisfaction with mobile-based utility bill payment systems in Malawi. The chapter also identifies research gaps for future studies as far as customer satisfaction with mobile based utility bill payment in Malawi is concerned.

5.2 Conclusion

The research had three specific objectives which are i) assess if customers using mobile utility bill payment system are satisfied ii) identify factors which contribute to customer satisfaction and /or dissatisfaction with the utility bill payment system and iii) investigate customers preference between mobile-based utility bill payment and cash-based payments. Based on the findings for this research, the following conclusions came out clearly regarding the research objectives.

5.2.1 Assessment of Customer Satisfaction on Mobile Utility Bill Payment System

Based on the first research objective, the study has shown that most customers using mobile-based utility bill payment system are satisfied. Additionally, the study identified three stages that are involved in mobile bill payment, and assessment of customer satisfaction was done based on these stages. The first stage was assessing the processes that are involved in the mobile payment. The study concluded that there are three processes involved in mobile payment: registration; topping up; and actual payment process. The study found that, with the registration process, customers are more satisfied with the mobile network linked platforms (Mpamba and Airtel Money) than with the mobile bank linked payment platform (Mo626ice). However, Customers on Mo626ice were more satisfied with the topping up process than those on Mpamba and Airtel Money. Despite the challenges that customers face in the payment process, it is concluded that customers are satisfied with the whole payment process.

The second stage involved in mobile bill payment, and assessment of customer satisfaction was assessing the overall mobile payment as a product. The study established that customers are satisfied with the overall mobile payment platform because they are able to execute their utility bills using the mobile payment.

The last stage assessed customer satisfaction by comparing customer's expectations against the perceived performance. It is concluded that customers had expectations before using the mobile payment, and satisfaction is determined by comparing the expectations

against the mobile payment performance. Customers who had more expectations but had received less on the actual mobile payment performance lost trust on the mobile payment and were somehow satisfied or even dissatisfied. On the other hand, customers who had more positives on mobile payment performance than the expected, trusted the mobile payment and were either satisfied or extremely satisfied.

5.2.2 Factors That Contribute To Customer Satisfaction

Based on the conceptual framework, it is concluded that there are factors that contribute to customer satisfaction and /or dissatisfaction with the use of mobile-based utility bill payment. The following have been identified as factors that contribute to customer satisfaction:

- Customers no longer queue for the bill payment.
- Time is saved when a customer uses mobile payment method.
- Mobile payment reduces the risk of money loss and theft since the money is kept in the mobile account.
- Transactional and transportation cost is saved.
- It is easy to use the mobile payment platform for bill payment.

5.2.3 Factors that Contribute to Customer Dissatisfaction

The following have been established as factors that contribute to customer dissatisfaction on mobile utility bill payment systems in Malawi:

- The mobile payment service is not always available.

- Sometimes the mobile payment platform is available but customers fail to access it because of network failure.
- Most mobile phones that have low memory space do not keep the reference number received after the bill payment. Sometimes the reference number comes in bits and pieces and it is difficult to keep them.
- Customer's utility accounts are updated very late after they have made a transaction through the mobile payment. It has also been concluded that customers who once met a challenge in mobile utility bill payment no longer trust the system, and prefer to use cash payment.

5.2.4 Customer Utility Bill Payment Method Preference

Based on third objective, customers paying for utility bills prefer using mobile based system to cash-based system. Furthermore, the study has shown that service providers have introduced other cash pay points apart from their cash offices which include the banks. On top of banks, ESCOM (one of the utility bill service providers) has stretched their cash pay points to Puma Filling Stations and Malawi Posts and Corporation offices.

The study has also shown that within the existing mobile platforms, customers prefer using Mo626ice as it is directly linked to their bank account and there is no need for them to go to the bank and top up the account. Mo626ice uses money available in the bank account, most of which is salary or other deposits.

Lastly, the study shown that customers using Mpamba and Airtel Money need to visit the agent if they want to top up and mostly they need to travel and do the top up.

5.3 Recommendations

Results of the study presents some useful strategies which mobile bill payment platform providers (TNM, Airtel and National Bank), utility bill service providers (ESCOM, BWB, Multi Choice Malawi) and clearing bank (Malswitch) can employ to stimulate customer satisfaction on mobile utility bill payment.

Firstly, network providers should have backup network infrastructure in case of network failure. Owned network infrastructure would help the mobile payment service providers to continually offer the utility bill payment service to customers even if their main network infrastructure is down. Customers would therefore not be affected with this external network caused challenge.

Apart from owning a network infrastructure, the mobile payment service providers could develop their own mobile payment platform that would enable them to freely troubleshoot and fix when there is a technical problem in the mobile payment.

On the other hand, mobile payment platform providers can maintain the same mobile payment platform but they need to negotiate with the outsourced mobile platform companies to train their local staff on the technical side of the mobile payment.

Secondly, Mobile payment platform should be directly linked to utility bill services providers' customer's system so that the payments should be directly updated without involving a third party. The delay in utility bill account update is mostly caused by the processes that are involved among the three parties. The parties are the mobile payment providers, the clearing (intermediately) bank and the utility bill service providers. Each of these three parties has their own platforms that are not compatible to each other. It would therefore be ideal to have one platform that should link all the three platform parties involved in the mobile payment system.

Again, from this study, it has been established that Mo626ice registration process is cumbersome and takes too long to be activated in the system hence there is a need for the bank regulators to define other ways of electronic registration so as to help customers adopt and be satisfied with the service. Apart from the electronic registration, Mpamba and Airtel money should provide other electronic means of allowing customers to report their complaints, just like Mo626ice provider (National Bank) has Skype and WhatsApp number for its customer care.

Still on the electronic customer care support, customers should be able to query their payment details and be able to reprint their receipt in case they have lost the reference number in the mobile phone. The reprinted reference or receipt could help to act as a proof to technicians who disconnect unpaid bills. To avoid embarrassment, technicians should also be provided with an updated list of customers who have already paid their bills through mobile payment with their receipt number.

Another important area of importance is the fact that Mpamba and Airtel platforms are not directly linked to the banks. Customers physically visit Mpamba and Airtel money agents if they want to have money into their account. To address this, these two platforms could provide an interface that is directly linked to the customer's bank so that customers should be able to update their mobile money through the bank account.

Still on the question of interface, Airtel money bill payment interface is not as user friendly as Mpamba and Mo626ice. The Airtel Money interface should be redesigned so as to be user friendly to reduce the hustle when customers try to interact with it.

The research has noted further that the intermediary banks do not usually do data cleaning in terms of failed payment transaction. It is therefore recommended that they clear and clean all the payment transactions received from the mobile network operators before sending them over to the utility service providers company. They should check that no failed transactions are included in the update list that is sent to the utility companies.

Lastly, the research has presented that utility companies fail to reconcile their bank account mobile utility bill payment transactions with what they have received from Malswitch. The intermediary bank should reconcile the daily mobile payments before sending the transaction to the utility bill companies.

5.4 Area for Further Study

The main objective of this study was to assess customer satisfaction with mobile utility bill payment in Malawi. Through the findings, the study discovered that network failure occurrences affect customer satisfaction in mobile utility bill payment. Although the network failure factor was identified as a crucial component as far as customer satisfaction with mobile utility bill payment is concerned in Malawi, the study did not research further on the effect of mobile network unreliability to mobile payment customers. There is need to investigate thoroughly the challenges and effects of mobile network reliability to mobile payment system in Malawi.

Another possible area of study should be analysing the benefits and challenges of mobile bill payment platforms interoperability in Malawi. Each mobile bill payment platform is managed by a separate mobile service provider and the mobile payment platforms are not linked to each other. The study at hand did not focus on the possibility of interlinking the mobile payment platforms in Malawi, which leaves room for analysis of benefits and challenges of mobile bill payment platforms interoperability in Malawi.

REFERENCE

- Abdelghani, E. & Aziz H. A. (2013). An empirical survey on the prospects of mobile money in morocco. *Studies in Business and Economics*, 1(8), 46-56.
- Abor, J. (2004). Technological innovations and banking in Ghana, Accra:Ghana Universities press. *Journal of Internet Banking and Commerce* , 17(2), 1-16.
- Agimo, J. (2004). Better practice checklist for epayment. Australia government information management office. Retrieved August 12, 2015, from http://www.agimo.gov.au/publications/better_practice_checklist_for_epayment.
- Agwu,M.E. & Carter, A.L. (2014). Mobile phone banking in Nigeria: benefits, problems and prospects. *International Journal of Business and Commerce*, 3(6), 50-70.
- Airtel, I. (2010). Airtel payment banks. Retrieved June 17, 2016, from www.airtel.in/bank.
- Airtel, I. (2012) Airtel Retrieved September 20, 2017, from www.airtel.in/about-bharti.
- Airtel, A. (2010). Airtel-money. Retrieved January 12, 2016, from <http://africa.airtel.com/wps/wcm/connect/africarevamp/africa/home/about-us/airtel-money/airtel-money>.
- Aker, J., Rachid, B., Amanda M. & Naill, T. (2011). *Zap it to me: The short-term impacts of mobile cash transfer program*. Washington DC: Centre for Global Development.
- Akiyoshi, M. & Ono, H. (2008). The Diffusion of Mobile Internet in Japan. *The Journal of Information Society*, 24(5), 292-303.

- Ali., L. J. (2003). Explicating relationship management as a general theory of public relations. *Journal of Public Relations Research*, 15(2), 181-198.
- Anderson, E.W., Claes, F.; Donald R. L., (1994). Customer Satisfaction,market share, and profitability. *Journal of Marketing*, 58(3), 53-66.
- Angelova, B. & Zekiri, J. (2011). Measuring customer satisfaction with service quality using American customer satisfaction model. *International Journal of Academic Research in Business and Social Sciences*, 1(3), 232-258.
- Ankra, E. (2013). Customer satisfaction of electronic products and services in Ghanaian banks. *Information and Knowledge Management*, 3(1), 7-18.
- Anyasi, F. I.& Otubu, P.A. (2009). Mobile phone technology in banking systems: It's economic effect. *Research Journal of Information Technology*, 1(1), 1-5.
- Bailey, J.E. and Pearson, S.W. (1983). Development of a tool for measuring and analyzing computer user satisfaction. *Management Science*, 29(5), 530-545.
- Balan, R. K., Ramasubbu, N., Prakobphol, K., Christin, N & Hong, J. (2009). The design and evaluation of peer-to-peer mobile system. *Mobisys '09 proceedings of the 7th International conference on mobile system, applications and services*,1(1),291-305.
- Bansal, H.S. and Taylor, S.F. (1999). The service provider switching model (SPSM): A model of consumer switching behaviour in the service industry. *Journal of Service Research*, 2(2), 200-218.
- Bearden, W. O. & Teel, J. E. (1983). Selected determinants of consumer satisfaction and complaint Reports. *Journal of Marketing Research*, 20(1), 21-28.

- Belardo, S., Pazer, H.L., Wallace, W.A. and Danko, W.D. (1982). Simulation of a crisis management information network: A serendipitous evaluation. *Decision Sciences*, 14(4), 588-606.
- Berry, L. P. ,Parasuraman, A. & Zeithaml, V.(1994). Reassessment of expectations as a comparison standard in measuring service quality:Implications for further Research. *Journal of Marketing*, 58(1), 111-124.
- Beshouri C., Chaia A., Cober B. and Gravrak J. (2010). Banking On Mobile To Deliver Financial Services To The Poor in Mertz R. (ed.), *Global Financial Inclusion*, 24-31,Viewed 16 January 2012, Retrieved from www.thegiin.org/assets/binary-data/RESOURCE/download_file/000/000/149-1.pdf.
- Beverley, H. (1996). *An introduction to qualitative research*. London:Sage.
- Blinco, K., Mason, J., McLean, N. & Wilson, S. (2004). Trends and issues in e-learning infrastructure development: *A White Paper foralt-i-lab*, 2(1),1-13.
- Brown, R. (2006). *Doing your dissertation in business and management: the reality of research and writing*(1st ed.). London,Sage.
- Burmeister, E. & Aitken, L. M. (2012). Sample size: How many is enough? *Australian Critical Care*, 25(4), 271-274.
- Burns, R., & Bush, R. F.,. (2000). *Market research*, (3rd ed.). Englewood Cliffs,NJ: Prentice-Hall International.
- Camici, P M , J. E. Yardley L. (2003). *Qualitative research in psychology expanding perspectives in methodology and design*, (1st ed.).. Washington DC: American Psychological Association.

- Chale, P.R & Mbamba, U. (2014). The role of mobile money services on growth of small and medium enterprises in Tanzania. Evidence from Kinondoni District in Dar-es-Salaam. *Business Management Review*, 17(1), 81-96.
- Chaston, I., Badger, B., Sadler-Smith, E. & Mangles, T. (2001). E:commerce:an opportunity to examine organizational learning in process. *International Journal of Small Business*, 19(2), 13-30.
- Chitakunye, P.,Thulani, Chummun, B.Z. (2014). Mobile Money as a Strategy for Financial Inclusion in Rural Communities. *Mediterranean Journal of Social Sciences*, 5(25), 216.
- Churchill, G.A. & Suprenant, C. (1992). An Investigation into the determinant of customer satisfaction. *Journal of Marketing Research*, 19(1), 491-504.
- Cranage, D. (2004). Plan to do it right: and plan for recovery. *International Journal of Contemporary Hospitality Management*, 16(4), 210-219.
- Creswell, J. (2009). *Research design: qualitative, quantitative and mixed methods approaches*. (4th ed.).California: Sage.
- Cronin, J.J. & Taylor, S.A. (1992). Measuring service quality: a reexamination and extension. *Journal of Marketing*, 56(3), 55-68.
- Dahlberg, T., Mallat, N., Ondrus, J. & Zmijewska A. (2008). Past, present and future of mobile payments research:. *Electronic Commerce Research and Application*, 7(1), 165-181.
- Davidson, N. & Leishman, P. (2012). *The case for interoperability, assessing value that interconnection for mobile money services would create for customer and operators*. London: GSMA.

- Davis, F. (1989). Perceived usefulness, perceived ease of use and user acceptance of information technology. *MIS Quarterly*, 13(3), 319-340.
- DeLone, W. H. & Mclean, E. R. (1992). Information systems success: the quest for the dependent variable. *Journal of Management Information Systems*, 29(4) 7-62.
- DeLone, W. H. & McLean, E. R. (2003). The Delone and Mclean model information systems success: A ten-year update. *Journal of Management Information Systems*, 19(4), 9-30.
- DeLone, W. H. & McLean, E. R. (2004). Measuring e-Commerce Success: Applying the DeLone & McLean information systems success model. *International Journal of Electronic Commerce*, 9(1), 31-47.
- Demombynes G. & Thegeya, A., (2012). *Public kenya's mobile revolution and the promise of mobile savings. Policy research working paper*. Washington DC: World Bank.
- Denzin, N.K & Lincoln, Y.S. (2000). *Handbook of Qualitative Research*. (2nd ed.). Newbury Park: Sage.
- DeSarbo, W. S. (1988). Response Determinants in Satisfaction Judgments. *Journal of Consumer Research*, 14(4), 495-507.
- Deshmukh, S.P., Naware. A.M. (2014). Mobile Money:M-payment System for India. *International Journal of Computer Science and Information Technologies*, 5(2), 2672-2675.
- DeWalt, K.M. & DeWalt, B.R. (2002). *Participant observation: a guide for fieldworks* (1st ed.). Walnut Creek: AltaMira Press.

- Dibley, L. (2011). Analyzing narrative data using McCormack's lenses. *Nurse Researcher*, 18(3), 13-19.
- Dick, A. & Basu, K. (1994). Customer loyalty: towards an intergrated framework. *Journal of the Academy of Marketing Sciences*, 22(2), 99-113.
- Doll, W. J., Xiadong, D., Raghunathan, T. S., Torkzadeh, G. and Xia, W. (2004). The meaning and measurement of user satisfaction: a multigroup invariance analysis of the end-user computing satisfaction instrument. *Journal of Management Information Systems*, 21(1), 227-262.
- Donio, J., Massari, P. , and Passinate, G. (2006). Customer satisfaction and loyalty in digital environment: An empirical test. *Journal of Consumer Marketing*, 23(7), 445-457.
- Ericsson, L. C. (2012). *Enhancing the consumer experience*. Stockholm: Ericsson.
- Ernst&Young. (2010). *Mobile Money:An Overview for Global Telecommunication Operators*. Newyork.
- Forrester, R. (2001). *Mobile Payments Slow Start*. Cambridge,United Kingdom.
- Franz, C. R.& Robey D. (1986). Origizational context, user involvement, and the usefulness of information systems. *Management Information System*, 17(3), 329-356.
- Fuerst, W.L. & Cheney, P.H. (1982). Concepts,theory and techniques:factors affecting the perceived utilization of computer-based decision support systems in the oil industry. *A Journal of the Decision Sciences Institute*, 13(4), 554-569.

- Gallardo, D. (2008). *Straight talk about communication research methods* (2nd ed.). St. Louis Hunt.
- Gartner, G. (2001). *Mobile Payment Services Will Fund Europe's Transition to 3G*. Geneva.
- Gefan, D. (2000). E-Commerce: The Role of Familiarity and Trust. *Omega: The International Journal of Management Science*, 28(6), 725-737.
- Gefen, D. (2002). Customer loyalty in E-Commerce. *Journal of the Association for Information Systems*, 3(1), 27-51.
- Gefen, D., & Straub, D. W. (2000). The Relative Importance of Perceived Ease of Use in IS Adoption: A Study of e-Commerce Adoption. *Journal of the Association for Information Systems*, 1(8), 1-28.
- Ghobadian, A., Speller, S. & Jones, M., (1993), Service quality: concepts and models. *International Journal of Quality and Reliability Management*, 11(9), 43-66.
- Grönroos, C. (1984). A Service quality model and its marketing implications. *European Journal of Marketing*, 18(4), 36-44.
- Grönroos, C. (1988). Service quality: The six criteria of good perceived service quality. *Review of Business*, 9(3), 10-13.
- Grönroos, C. (1991). The Marketing Strategy Continuum: Towards a Marketing Concept for the 1990s. *Management Decision*, 29(1), 7-13.
- Grönroos, C. (1993). Toward a third phase in service quality research: challenges and future directions, *European Journal of Marketing*, 2(1), 49-64.

GSMA. (2013). *Mobile money in the Democratic republic of congo*. London: GSMA.

GSMA. (2014). *Mobile financial services for the unbanked*. London: GSMA.

GSMA. (2015). *The mobile economy report*. London:GSMA.

Gustafsson, A., Johnson,M. & Roos,I . (2006). The effects of Customer Satisfaction, Relationships commitment dimensions, and triggers on customer retention. *Journal of Marketing*, 69(4), 210-218.

Halstead, D. (1999). The use of comparison standards in customer satisfaction research and management: a review and proposal typology. *Journal of Marketing Theory and Practice*, 7(3), 13-26.

Hashed A.N. M, Salniza B. M. S. & Hamid, M. G.. (2012). Factors Affecting Customer Satisfaction of Mobile Services in Yemen. *American Journal of Economics*, 2(7), 171-184.

Helmi, H. (2011). Can E-Payment systems revolutionize finance of the less developed countries: The case of mobile payment technology. *International Journal of Economics and Financial Issues*, 1(2), 46-53.

Herzberg, A. (2003). Payment and banking with mobile personal devices. *Communications of the ACM*, 46(5), 53.

Holsapple, C.W. & Lee-Post, A. (2006). Defining, assessing, and promoting e-elearning success: An information systems perspective. *Decision Sciences Journal of Innovative Education*, 4(1), 67-85.

Hope, R., Foster, T., Money, A., Rouse, M., Money, N. E.&Thomas, M., (2011). *Smart Water Systems. Project report to UK DFID*, Oxford : Oxford University.

- Ikeda, J. (2014). *Water by phone: transforming utilities in the developing world*. Retrieved 04 06, 2017, from <http://www.cgap.org/blog/water-phone-transforming-utilities-developing.pdf>.
- InterMedia. (2012). *Audiencescapes* Retrieved July 7, 2016, from <http://www.audiencescapes.org/country/profiles/kenya/communication-and-development-finance/case-study-mobile-money/case-s>.
- InterMedia. (2013). *Mobile Money in Tanzania; Use, Barriers and Opportunities*. Retrieved August 2016, 2013, from www.intermedia.org/wp-content/uploads/FITS_Tanzania_FullReport_final.pdf.
- Ives, B., Olson, M.H., Baroudi, J.J. (1983). The measurement of user information satisfaction . *Communications of the ACM, New York*, 26(10), 785-793.
- Jack, W. & Suri, T. (2011). Risk sharing and transactions costs: Evidence from Kenya's mobile money revolution. *The American Economic Review*, 104(1), 183-223.
- Jenkins, B. (2008). *Developing Mobile Money Ecosystems*. Washington,DC: IFC & the Harvard Kennedy School.
- Jaiswal, P. K. (2011). SMS Based Information Systems. (Masters Thesis), University of Eastern Finland.
- Kabanda, G. (2014). The Impact of ICTs on Customer Service Excellence in Zimbabwe. *International Journal of Emerging Technology and Advanced Engineering*, 4(5), 312-324.
- Kim, M., Park, M. & Jeong, D. (2004). The effects of customer satisfaction and switching barrier on customer loyalty in Korean mobile telecommunication services. *Telecommunications Policy*, 2(1), 145-159.

- King W. R. and Rodriguez J.I. (1978). Evaluating management information systems. *MIS Quartely*, 2(3), 43-51.
- Kolodinsky, J., Hogarth, J. M., and Shue, J. F., (2000). Bricks or Clicks? Consumers adoption of electronic banking technologies. *Consumer Interests Annual*, Retrieved on 12 october 2016 from <http://www.consumerinterests.org/files/public/bricks.PDF>.
- Kolter, P. (2000). *Marketing management* (7th ed.).. Englewood Cliffs,NJ: Prentice Hall.
- Kothari, C. (2000). *Research methodology: methods and techniques* (2nd ed.). New Delhi ,India: New age International (P) Limited,Publishers.
- Kothari, C. R. (2004). *Research methodology: Methods and techniques* (2nd ed.). New age India: New age International (P) Limited.
- Kothari, C. (2006). *Research Methodology: Methods and Techniques* (7th ed.). New Delhi, India. India: New age International (P) Limited.
- Kufandirimbwa, O., Zanamwe, N., Hapanyengwi, G., & Kabanda, G. (2013). Mobile Money in Zimbabwe: Integrating Mobile Infrastructure and Processes to Organisation Infrastructure and Processes. *Online Journal of Social Science Research*, 2(4), 92-110.
- Law, J. (2009). Online Markerting-A Dictionary of Business and Management. *Oxford University Press;Oxford Reference Online; Oxford University Press Vilnius Gediminas Technical University*.
- Lee, H., Lee, Y. & Yoo, D. (2000). The determinants of perceived service quality and its relationship with satisfaction. *Journal of Services Marketing*, 14(3), 217-231.

- Lee, K.C. & Chung, N. (2009). Understanding factors affecting trust in and satisfaction with mobile banking in Korea: a modified DeLone and McLean's model perspective. *Interacting with Computers*, 21(5/6), 385-392.
- Lepkova, N. &.-J. (2012). Study on customer satisfaction with facilities management service in lithuania. *Slovak Journal of Civil Engineering*, 20(4), 1-16.
- Lovelock, C. ,Wirtz, J & Chew, P. (2008). *Essentials of service marketing*. Singapore:Pearson education South Asia
- Lucas Jr, H. (1978). The use of an interactive information storage and retrieval system in medical research. *Communications of ACM*, 21(3), 197-205.
- Luo, X & Homburg, C. . (2007). Neglected Outcomes of Customer Satisfaction. *Jornal of Marketing*, 71(2), 133-149.
- Maish, A. M. (1979). A user's behavior towards his MIS. *MIS Quartely*, 3(1), 39-52.
- Mallat, N. (2007). Exploring consumer adoption of mobile payments-A qualitative study. *The Journal of Strategic Information Systems*, 16, 413-432.
- Malswitch. (2016). products&Services. Retrieved December 12, 2016, from <http://www.malswitch.mw>.
- Mas & Ignacio. (2009). *The Economics of Branchless Banking* (2 ed.). Boston: MIT.
- Mbiti, I., & Weil, D.N. (2011). Mobile banking: the impact of M-Pesa in kenya. *NBER working paper No. 17129*,1(3), 247-293.

- Mbogo, M. (2010). The Impact of Mobile Payments on the Success and Growth of Micro-Business: The Case of M-Pesa in Kenya. *The Journal of Language, Technology & Entrepreneurship in Africa*, 2(1), 182-203.
- McKay, C. & Pickens, M. (2010). *Branchless banking 2010: who's served? at what price? what's next*. Washington, Dc.: Consultative group to assist the poor.
- McKnight, D. & Chervany, N.L. (2002). What trust means in e-commerce customer relationships: An interdisciplinary conceptual typology. *International Journal of Electronic Commerce*, 6(2), 35-59.
- Miller, J. A. (1977). Studying Satisfaction, Modifying Models, Eliciting Expectations, Posing Problems, and Making Meaningful Measurements; Conceptualization and Measurement of consumer satisfaction and dissatisfaction. *Marketing Science Institute*, 10(1), 72-91.
- MNT, U. (2010). MNT and PostBank Uganda Ltd announce Partnership. Retrieved February 18, 2017, from <http://bit.ly/mtn-mobile-money-uganda>.
- Mobey, F. (2001). *White Paper on mobile financial services*. London: Mobey Financial services.
- MTN, L. (2016). MTN Mobile Money. Retrieved February 21, 2017, from www.mtn.co.za/pages
- Myers, M. (1997). Qualitative research in information systems. *Management Information Systems Quarterly*, 21(1), 241-242.
- Meyers, M. (2007). The qualitative interview in IS research: examining the craft. *Information and Organization*, 17(1), 2-26.

- Nam, C., Kim, S. & Lee, H (2008). The role of WiBro:Filling the gaps in mobile broadbands technologies. *Technological Forecasting and Social Change*, 75(3), 438-448.
- National Statistics Office, (2014). *Survey On Access And Usage Of ICT Services In Malawi*. Blantyre: NSO,MACRA.
- NBM. (2016). Electronic banking. Retrieved March 2, 2016, from www.natbank.co.mw/index.php/personal/electronic-banking/mo626ice
- Ndunge, K., & Mutinda, J. (2012). Mobile money services and poverty reduction: A study of women groups in rural Eastern Kenya. *Institute for Money, Technology and Financial Inclusion (IMTFI)*.
- Nguyen N & Leblanc G. (2001). Corporate image and corporate reputation in customers' retention decisions in services. *Journal of Retailing and Consumer Services*, 8(1), 221-236.
- Nicholaus, S.C. & Venkatakrishnan, V. (2013). Challenges of mobile-phone money transfer services' market penetration and expansion in Singida District, Tanzania. *International Journal of Research in Managemnet & Technology*, 3(6),480-488.
- Nyirenda, M. & Chikumba, P. (2013) Consumer adoption of mobile payment systems in Malawi: Case of Airtel Malawi ZAP in Blantyre City. International Conference on e-Infrastructure and e-Services for Developing Countries. (178-187), *Springer International*.
- Nielsen, J. (1993). *Usuability Engineering*. San Francisco: Morgan Kaufmann.

- Njoroge, J. M. (2011). Influence of the adoption of mobile money payment strategy on organization performance of nanyuki water and sewerage company. *European Journal of Business and Strategic Management*, 2(5), 1-15.
- NPS. (2008). *Monthly Report on National Payment System-April 2008*. Lilongwe: National Payment System.
- NPS. (2015). *Monthly Report on National Payment System-April 2015*. Lilongwe: National Payment System.
- NPS. (2017). *Monthly Report on National Payment System-August 2017*. Lilongwe: National Payment System.
- Oliver, R. (1977). Effects of expectation and disconfirmation on post-exposure product evaluations: an alternative interpretation. *Journal of Applied Psychology*, 62(4), 480-486.
- Omwansa, T. (2009). M-Pesa Progress and Prospects. Innovations case discussion. Retrieved march 15, 2016, from www.strathmore.edu/pdf/innov-gsma-omwansa.pdf.
- Omwasa, T. (2012). Modeling Adoption of Mobile Money by the poor in Kenya.(Phd Thesis), University of Nairobi.
- Ong C.S & Lai J.Y. (2006). Gender differences in perceptions and relationships among dominants of e-learning acceptance. *Computers in Human Behaviour*, 22(5), 816-829.
- Otieno O.C., Liyala S., Odongo C.B. & Silvance A, (2016). Challenges facing the use and adoption of mobile phone money services. *World Journal of Computer Application and Technology*, 4(1), 8-14.

- Otiso, K.N., Chelangat, D. & Bonuke, R.N. (2012). Improving the quality of customer service through ICT use in the Kenya Power and lighting Company. *Journal of Emerging Trends in Economics and Management*, 3(5), 461-466.
- Pairot, R. (2008). Members' satisfaction of fitness service quality: A Case Study Of California wow xperience public company limited. (Masters Thesis) Srinakharinwirot Univesity.
- Palmer, J. (2002). Web Site usability, design, and performance metrics. *Information Systems Research*, 13(2), 151-167.
- Pavlou, P. A., & Fygenson, M. (2006). Understanding and predicting electronic commerce adoption: An extension of the theory of planned behavior. *Management Information Systems Quarterly*, 30(1), 115-143.
- Parasuraman, A., Zeithaml, V.& Berry, L.L, (1988). Servqual: A Multiple-item scale for measuring consumer perceptions of service quality. *Journal of Retailing*, 64(1), 12-40.
- Parasuraman, A., Zeithaml, V.A. and Berry, L.L. (1985). A conceptual model of service quality and its implications for future research. *Journal of Marketing*, 49(4), 41-50.
- Parker, C. & Mathew, B. (2001). Customer Satisfaction: contrasting academic and consumers' interpretations Planning. *Marketing Intelligence & Planning* 19 (1), 38-44.
- Penicaud, C. (2013). State of the Industry: Results from the 2012 Global Mobile Money Adoption Survey. GSMA Mobile Money for the Unbanked. Retrieve July 10,2017, from http://www.gsma.com/mobilefordevelopment/wp-content/uploads/2013/02/MMU_State_of_industry.pdf.

- Perez-Mira, B. (1995). Validity of Delone and Mclean's model of information systems success at the website level analysis. (Phd Thesis) Louisiana state university and agricultural Mechanical college.
- Peter, J.P. and Tarpey, L.X. (1975). A Comparative analysis of three consumer decision strategies. *Journal of Consumer Research*, 2(1), 215-224.
- Peterson, P.G., & Johnson, L.W. (1993). Disconfirmation of expectations and the gap model of service quality. An integrated paradigm. *Journal of Consumer Satisfaction, Dissatisfaction and Complaining Behavior*, 6(1), 90-99.
- Peterson, R.A.Y & Wilson, R.W. (1993). Measuring customer satisfaction: Fact and Artifact. *Journal Of Academic of Marketing Science*, 20(1), 61-71.
- Pikkarainen, T., Pikkarainen, K., Karjaluoto, H., & Pahnla, S. (2004). Consumer acceptance of online banking: An extension of the Technology Acceptance Model. *Internet Research*, 14(3), 224-235.
- Polit, D.F. & Hungler, B.P. (1999) *Nursing research: principles and methods* (6th ed.) Philadelphia JB, Lippincott Williams & Wilkins.
- Pousttchi, K. (2003). Conditions for Acceptance and Usage of Mobile Payment Procedure. *The Second International Conference on Mobile Business*, 1(1), 201-210.
- Pousttchi, K. (2008). A Modeling approach and reference models for the analysis of mobile payment use cases. *Electronic Commerce, Research and Applications*, 7(2), 182-201.

- Ranaweera, C. & Prahbu, J., (2003). The influence of satisfaction, trust and switching barriers on customer retention in a continuous purchasing setting. *International Journal of Service Industry Management*, 14(3/4), 374-395.
- Raymond, L. (1985). Organizational characteristics and MIS success in the context of small business. *MIS Quarterly*, 9(1), 37-52.
- Rogers, M. E.(1983). *Diffusion of innovations*. (1st ed.). New York: MACMILLIAN
- RBM. (2012). *NPS Vision Strategy Framework December 2013-18*. Blantyre, Reserve Bank of Malawi.
- Ruyter, K., Wetzels, M., Kleijnen M. (2001). Customer adoption of e-service: an experimental study. *International Journal of Service Industry Management*, 12(2), 184-207.
- Rubin, A & Babbie, E.R. (2009). *Essential research methods for social work*. (2nd ed.). Belmont, CA. Wadsworth.
- Safaricom. (2011). *M-PESA Customer and agent numbers*. Retrieved January 10, 2017, from http://www.safaricom.com.ke/fileadmin/M-PESA/Documents/statstics/M-PESA_Statistics_-2.pdf
- Saidi, E. (2009). Mobile Opportunities, Mobile Problems; Assessing Mobile Commerce Implementation Issues in Malawi. *Journal of Internet Banking Commerce*. 14(1), 1-10.
- Sandhursen, R. (2000). *Research methods for business students* (4th ed.). Thomhill: Prentice Hall.

- Schiffman, L., David B., Elizabeth C., Aron O., Judith W., & Leslie K. (2001). *Consumer Behaviour*. Australia: Prentice-Hall.
- Schneider, G. (2011). *Electronic Commerce* (9 ed.). Boston: Cengage Learning
- Sharra, A. (2014, October 9). Is there hope for faster internet? *The nation newspaper*, Retrieved from mwnation.com
- Seth, N., Deshmukh, S.G., Prem, V. (2005). Service quality models: a review . *International Journal of Quality and Reliability Management*, 22(9), 913-949.
- Sife, S., A., Kiondo, E., & Lyimo-Macha, G.J. (2010). Contributions of mobile phones to rural livelihoods and poverty reduction. *Electronic Journal of Information Systems in Developing Countries (EJISDC)*, 42(3), 1-15.
- Simuyu, C. (2015). Mobile Money Transfer and the growth of small and medium sized enterprises in Kenya. *International Journal of Economics, Commerce and Management*, 3(5), 21-37.
- Smith, L. and Roth, H. (2003) Parking Systems Technology Report. ITS Decision. Partners for Advanced Transit and Highways, University of California Retrieved August 5, 2016, from
- Berkeley. July. http://www.path.berkeley.edu/~leap/serv_and_tech/Parking_Systems_Technologies/parking_systems_tech_report.htm.
- Soderlund, M. (1998). Customer satisfaction and its consequences on customer behaviour revisited: The impact of different levels of satisfaction on Word-of-Mouth. *International Journal of Service Industry Management*, 78(1), 169-183.

- Sousa, R., & Voss, C.A. (2002). Quality Management Revisited: A reflective review and agenda for future research. *Journal Of Operations Management*, 20(1), 91-109.
- Spreng, R. A., & Mackoy, R. D. (1996). An empirical examination of a model of perceived service quality and satisfaction. *Journal of Retailing*, 72(2), 201-214.
- Stavros, C., & Westberg, K. (2009). Using triangulation and multiple case studies to advance relationship marketing theory. *Qualitative Market Research*, 12(3), 307-320.
- Stefan, R. & Kathrin, B. (2015). The influence of customer satisfaction on customer price behavior : literature review and identification of research gaps. *Management Review Quartely*, 65(1), 1-33.
- Strategy Analytics Inc. (2001), Strategy Analytics Forecasts \$230 Billion Mobile Commerce Market by 2006 (press release). Retrieved January 17,2016, from www.strategyanalytics.com
- Swanson, E. (1974). Management information systems: appreciation and involvement. *Management Science*, 21(2), 178-188.
- Tata Consultancy Services (2008) Alternative payment systems, India: Tata Consultancy Services Limited
- Tilahun W & Tafa M (2016). The Impact of electronic banking on Customers' satisfaction in ethiopian banking industry (The Case of Customers of Dashen and Wogagen Banks in Gondar City). *Journal of Business and Financial Affairs* .5(2), 1-18.
- TNM. (2013). What -is-Mpamba. Retrieved 01 31, 2015 from www.tnmpamba.com.mw/products/

- Tobbin, P. (2012). Towards a model of adoption in mobile banking by the unbanked: a qualitative study. *Digital Policy, Regulations and Governance*, 14(5), 74-88.
- Tossy, T. (2014). Modelling the adoption of mobile payment system for primary and secondary school student examination fees in developing countries: Tanzanian Experience. *International Journal of Information Technology and Business Management*, 27(1)1-16.
- Turban, E., D. King, et al. (2002). *Electronic commerce 2002: a managerial perspective*. (2nd ed.) Pearson Education: Upper Saddle River, NJ.
- UNCDF. (2013). finextra. Retrieved march 14, 2016, from www.finextra.com/news/fullstroy
- UNCDF (2014). *Mobile Money for the poor in Malawi*. Retrived 20 September 2016 from <http://www.uncdf.org/article/1177/mobile-money-for-the-poor-mm4p-in-action-in-malawi-migration/mobile.pdf>
- UNCTAD. (2012). *UNCTAD*. Retrieved November 5, 2016, from http://unctad.org/en/PublicationsLibrary/dtlstict2012d2_en.pdf
- USAID, 2013. Making the Journey from Cash to Electronic Payments. Washington DC : USAID. Retrieved 20 January 2018 from [/www.usaid.gov/sites/default/USAID_NetHope_ePayment_Toolkit_2016.pdf](http://www.usaid.gov/sites/default/USAID_NetHope_ePayment_Toolkit_2016.pdf).
- Vance, A., Elie-Dit-Cosaque, C. & Straub, D., (2008). Examining trust in information technology artifacts: the effects of system quality and culture. *Journal of Management Information Systems*, 24(4), 73-100.
- Vanlommel, E. & Debrabander, B. (1975). The organization of electronic data processing (EDP) activities and computer use. *Journal of Business*, 4(10), 391-394.

- Viehland, D., & Leong, R. S. Y. (2007). Acceptance and Use of Mobile Payments *18th Australasian Conference on Information Systems*, 1(2),665-667
- Vong, J. & Insu, S. (2012). Delivering financial services through mobile phone technology: a pilot study on impact of mobile money services on micro-entrepreneurs in rural Cambodia. *Internation Journal Information System Change Management*, 6(1),177-186.
- Wandawanda, G. (2005). *Business dexterity: Can mobile business solutions offer a sustainable competitive advantage?* (Masters Thesis). University of Derby, United Kingdom.
- William H. DeLone & Ephraim R. McLean. (2004). Measuring e-Commerce Success: Applying the DeLone & McLean Information Systems Success Model. *International Journal of Electronic Commerce*, 9(1), 31-47.
- Williams C.,2007. Research Methods. *Journal of Business and Economic Research*, 5(3), 1-8.
- Wirtz W. & Nikolai Lihotzky. (2003). Customer retention management in the B2C Electronic Business. *An International Journal*, 1(2), 42-55.
- Wimox & Barabara H. (2001). an empirical investigation of the factors affecting data warehouse success. *MIS Quartely*, 25(1), 17-41.
- Wood, W. & Li, S. (2005). The Empirical analysis of techonology camel. *Issues in Information System*, 6(2), 154-160.
- World, B. (2010). *At the tipping point? the implications of Kenya's ICT revolution. Kenya Economic update*. Washington Dc: The World Bank.

- Yeung, M.C.H.,Ging, L. and Ennew, C.T. (2002). Customer satisfaction and profitability: A reappraisal of nature of the relationship. *Journal of Targeting. Measurement and Analysis for marketing*, 11(1), 24-33.
- Yeow P M., Haliyana K. , Devika N. (2017). Millennials' Perception on Mobile Payment Services in Malaysia. *Procedia Computer Science*. 124(1) 397-404
- Yin, R. K. (1984). *Case study research:Desugn and methods* (2nd ed.). Michigan: Sage.
- Yüksel, A & Yüksel, F. . (2004). The exepectancy-Disconfirmation paradigm:A critique. *Journal of Hospitality And Tourism Research*, 25(2),107-131.
- Zhao, Y. & Saha, P. (2005). *Relationship between online service quality and and Customer Satisfaction*.(Masters Thesis), Luleå University of Technology, Sweden.
- Zhou, T. (2012). Understanding users' initial trust in mobile banking: An elaboration. *Computers in Human Behavior*, 28(1), 1518-1525.
- Zutt, J. (2010). Kenya Economic Update:Poverty Reduction and Economic Management Unit Africa Region Edition3. World Bank. Retrived from <http://www.biztechafrika.com/article/m-pesa-targets-smes/6315#>.

APPENDICES

Appendix 1: Interview guide for a mobile money customer

INFORMATION GATHERING ON CUSTOMER SATISFICATION ON MOBILE UTILILTY BILL PAYEMNT SERVICE-FOR CUSTOMERS

My name is Alima Mlomba Jika, working for the University of Malawi-The Polytechnic. I am conducting a research titled **“Assessment of customer satisfaction on mobile services on utility bill payment in Malawi”** with a special focus on Mo626, MPAMBA and AIRTEL MONEY as part of requirements for the award of Master of Science in Informatics from the University of Malawi.

I invite you to be part of this research study. This will involve your participation in a face to face interview. If you consent to participating in this study, I kindly request you to respond to the questions below to the best of your knowledge. If you have any question concerning this research, do not hesitate to call the researcher on 0888 398 249 or 0999 167 768 or write an email to hamlomba@gmail.com

Consent Given: _____ Date: _____

General Information

1.1 Age: ☐ Less than 30 Years ☐ Between 30 and 40 Years ☐ Between 41 and 50 Years ☐ More than 50 Years	1.2. Gender: ☐ Male ☐ Female	1.3.Educational Level ☐ None ☐ Primary ☐ MSCE ☐ Diploma ☐ Degree ☐ Postgraduate ☐ Other
1.4. Occupation _____	1.5.Location ____	

Section A: REGISTRATION

1. How do you pay your utility bills?

☐ Cash

☐ Mobile

2. Which Mobile payment method(s) have you registered with? (you can pick more than one choice)

☐ Mo626

☐ Airtel Money

☐ Mpamba

Other

.....

3. Which of the mobile payment method(s) registered above do you use in paying for utility bills?

☐ Mo626

☐

Airtel Money

☐

Mpamba

Other

-
4. What were your main benefits/reasons you considered when you were registering for the mobile payment?(your expectations)

.....

.....

.....

.....

.....

5. What utility bills do you pay using mobile payment method?

.....

.....

.....

6. How often do you use the mobile payment method?(do you intend to return to mobile bill payment service in the next 30 days?)

.....

.....

.....

.....

7. Why do you prefer using the mobile payment method (s) mentioned above?

.....

.....

.....

.....

.....

8. How did you get to know the existence of the mobile payment utility bill payment?

.....

.....

.....

.....

9. Which of the following method of registration did you use?

☐

Online Registration

☐

Mobile agent

☐

Fixed agent

☐

Mobile Service provider's office

☐

Banks

☐

Utility Companies

Other

.....

10. What were the challenges you encountered during the registration process?

.....

.....

.....

.....

.....

11. How satisfied were you with the registration procedures?

☐

Very satisfied

☐

Satisfied

☐

Somehow Satisfied

☐

Dissatisfied

☐

Very Dissatisfied

Other

.....

SECTION B: TOP UP

12. How do you top up for the mobile payment?

.....

.....

.....

.....

.....

13. What are the challenges involved in topping up?

.....

.....

.....

.....

.....

14. What other mobile payment service would you wish the utility companies were providing?

.....

.....

.....

.....

.....

SECTION C: CUSTOMER CARE

15. What problems do you experience when paying for utility bills?

.....

.....

.....

.....

.....

.....

16. Where do you report when you have a problem with mobile payment service?

.....
.....
.....

17. How do you report when you have a problem with the mobile payment service?

.....
.....
.....
.....
.....
.....
.....

18. How are you helped?

.....
.....
.....
.....
.....

19. How long does it take for you to be helped?

.....
.....
.....
.....

SECTION D: PAYMENT

20. Have you ever noticed any security mechanism when using mobile payment?

.....
.....
.....
.....

21. What are the security features available on mobile payment?

.....
.....
.....

22. How comfortable are you with the security mechanism (features) that are available in the mobile payment?

.....
.....
.....

23. How do you describe mobile payment process for utility bills?

☐	Verv simple
☐	Simple
☐	Difficult
☐	Very difficult

Other

.....

24. Would you recommend mobile bill payment service to your friends and relatives?

.....
.....
.....

25. How can you rate satisfaction in terms of payment for utility bills using mobile service?

☐	Verv Satisfied
☐	Satisfied
☐	Somehow Satisfied
☐	Dissatisfied
☐	Very Dissatisfied

Other.....

Thank you for your time

Appendix 2: Interview guide for utility companies

INFORMATION GATHERING ON CUSTOMER SATISFICATION ON MOBILE UTILILTY BILL PAYMENT SERVICE-FOR SERVICE PROVIDERS

My name is Alima Mlomba Jika, working for the University of Malawi-The Polytechnic. I am conducting a research titled “**Assessment of customer satisfaction on mobile services on utility bill payment in Malawi**” with a special focus on Mo626, MPAMBA and AIRTEL MONEY as part of requirements for the award of Master of Science in Informatics from the University of Malawi.

I invite you to be part of this research study. This will involve your participation in a face to face interview. If you consent to participating in this study, I kindly request you to respond to the questions below to the best of your knowledge. If you have any question concerning this research, do not hesitate to call the researcher on 0888 398 249 or 0999 167 768 or write an email to hamlomba@gmail.com

Consent Given: _____ Date: _____

1.4. Company Name _____	1.5. Position _____
--------------------------------	----------------------------

SECTION A: REGISTRATION

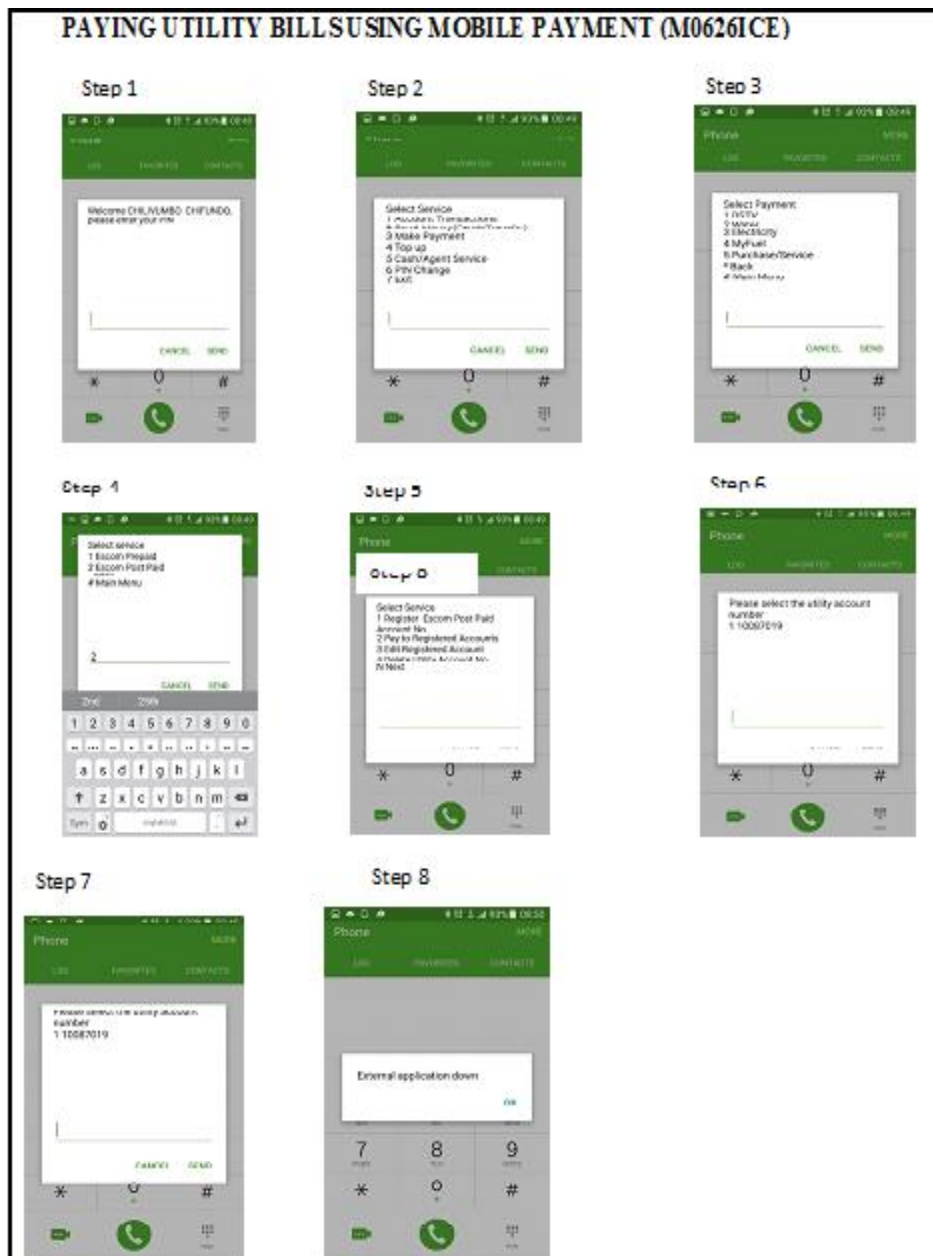
1. What mobile payment service do you offer to customers?
2. What utility bills are available in the mobile payment service?
3. How do you publicize information about utility bill mobile payment service?
4. How do you get customers registered?
5. What are the requirements needed for a customer to be registered with mobile payment service?
6. As a company, what were the reasons when introducing m payment?
7. How many customers in a month use mobile payment service?

SECTION B: CUSTOMER CARE

8. In your opinion, what are the challenges that customers face in using mobile payment services?
9. And what are the challenges that you (as a company) face in regards to bill payment using mobile service method?
10. How do you help customers when he has reported a problem concerning mobile payment service?
11. How long does it take to resolve customers' complaint?
12. How do you communicate and/get feedback to customer who had reported a problem concerning mobile payment service?
13. How does customers' feedback help the company in improving service related to expectations and quality standards?
14. How efficient has the mobile bill payment affected your company?

Thank you for your time

Appendix 3: Mo626ice payment process



Appendix 4: Mo626ice registration form



NATIONAL BANK OF MALAWI

Registered under the Banking Act 1989

e-Banking Services

HEAD OFFICE, P.O.BOX 945, BLANTYRE, MALAWI.

Phone: + 265 (0) 1824793/ (0) 1820622/823135, Fax +265 (0) 824796, E-mail:

ebu@natbankmw.com

MOBILE PHONE BANKING APPLICATION FORM

Please complete, sign below and submit to e-Banking Services, Fax +265 (0) 1824796. E-mail:

ebu@natbankmw.com

Date.....

Name: (Surname)First Name(s).....

Postal Address.....

Telephone Number.....Email Address.....

Personal Details (E.g. Father/Mother's First Name, Pet's Name, Village Etc).

.....

(Clearly write or tick what personal details you have provided in space provided stand for. i.e. if it stands for Village, tick Village)

Date of Birth.....

Mobile Phone Number(s) To Be Registered For Access: 1 2.....

Each Account Below Will Be Linked To A 4 character A/C Id Of Your Choice As An Alias Used To Access That Particular Account

(Your chosen A/C ID must be exactly 4 characters. Clearly write it in space provided)

**1. A/C Number.....Service
Centre..... Your A/C Id.....**

**2. A/C Number.....Service
Centre.....
.Your A/C Id.....**

**3. A/C Number.....Service
Centre.....Your A/C
Id.....**

**4. A/C Number.....Service
Centre.....Your A/C
Id.....**

Services Provided: *(Clearly Tick Services Required)*

Balance Enquiry

Cheque Book Request

Transaction Enquiry

Mobile Top-Up

Funds Transfer/Third Party Payments

Bill Payment

☐

Stop Payment

☐

Amount alert option (Your account has been debited by XXXX amount. Please

Indicate alert amount required for system alert) K.....

Terms and Conditions

1 The Service

- 1.1 The service is designed to give National Bank of Malawi customers to enquire balances, transactions, top up mobile phone units, inform user of transaction movement in accounts and various other facilities related to the product as will be introduced from time to time.
- 1.2 The customer shall follow National Bank of Malawi Security procedures at all times to avoid unauthorised access to the National Bank of Malawi login information.
- 1.3 National Bank of Malawi does not guarantee that the service or the use thereof by the customer will be uninterrupted.

2 Termination

- 2.1 National Bank of Malawi shall cease to provide the Service to the customer if the customer ceases to be a National Bank of Malawi customer or otherwise ceases to utilise the system for any reason or if National Bank of Malawi reasonably believes that the Service is not of value to a customer who has not used it for a period of at least 3 months. National Bank of Malawi may also cease to provide the service where the customer uses the service for fraudulent purposes or commits gross negligence in the operation of the service.
- 2.2 This Agreement may be amended to include a development in, or the introduction of, new products and services and new ways in which the customer can use the Service, or to

reflect a change in the law including any code of practice (or the way in which they are applied) or to correct a mistake.

- 2.3 National Bank of Malawi shall inform the customer of any change by sending an e-mail, separate written notice or by advertising on its broadcast.
- 2.4 National Bank of Malawi shall give at least one month's prior notice for any amendment to this Agreement.

3 Disclaimer

- 3.1 National Bank of Malawi shall not be liable for any losses the customer may suffer on any Account if the Account is subject to unauthorised access or an unauthorised transaction unless that unauthorised access or unauthorised transaction is caused by the Bank's negligence.
- 3.2 Should the customer believe that there has been any unauthorised access or any unauthorised transaction affecting their account, the customer shall inform National Bank of Malawi immediately by phone followed by written confirmation and provide the Bank with reasonable assistance to investigate the position in accordance with National Bank of Malawi's procedures. The customer hereby agrees to provide National Bank of Malawi with all the assistance, technical or otherwise, which National Bank of Malawi may need in the said investigation.

4 Governing Law

This agreement shall be governed by the Laws of Malawi and the parties hereto consent to exclusive jurisdiction of the Malawi courts in all matters regarding it.

5 **What it costs the client**

The bank recovers a commission as provided in tariffs book which is subject to review at the bank's prerogative.

I/We agree to the foregoing information and above Terms and Conditions.

Signature -----	Signature -----
--	---

**FOR NATIONAL BANK OF
MALAWI**

Signature -----	Signature _____
-----------------	-----------------

Name-----	Name-----
-----------	-----------

Date-----	Date-----
-----------	-----------

Appendix 5 Payment details with different balances

Example of a mobile payment done through Mo626ice where it took 7 days to be updated in the customer's account

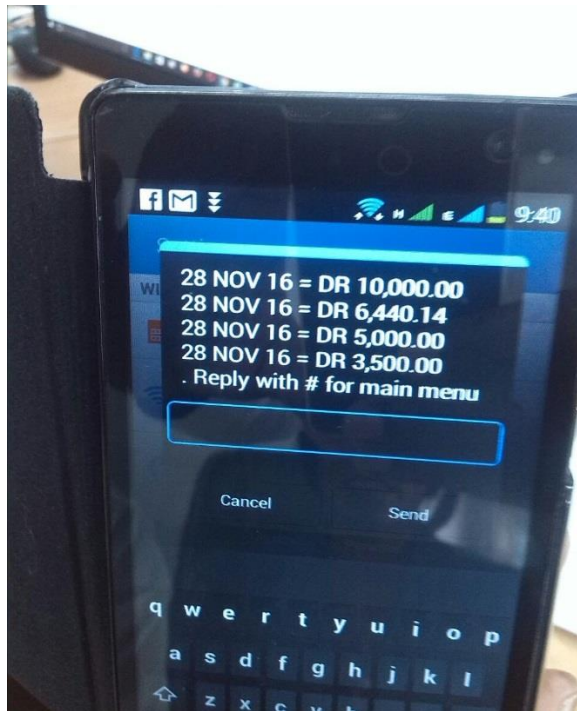
1. Bank Transaction report showing a payment was done to BWB on 28 November 2016

FUNDS.TRANSFER

HOLDERROUTE	More Actions	
FUNDS.TRANSFER	FE16333/FLCVK(CHICBRI)	
Transaction Type	ACMP	Did Payment by Menu20
Debit Acct No	1149385	
Currency Mkt Dr	E	Capital Market
Debit Currency	MWK	Malawi Kwacha
Debit Amount	6,440.14	
Debit Value Date	28 NOV 2016	28 NOV 2016
Debit Their Ref	SMBU42197945	
Credit Their Ref	010056086	
Credit Acct No	740101	BWB ATM BILL PAYMENTS ACC
Currency Mkt Cr	E	Capital Market
Credit Currency	MWK	Malawi Kwacha
Credit Value Date	28 NOV 2016	28 NOV 2016
Processing Date	28 NOV 2016	28 NOV 2016
Payment Details.1	PETER BANDA	
Payment Details.2	010056086	
Payment Details.3	0141120004200	
Charges Acct No	0000001149385	
Charge Com Display	No	
Commission Code	No	Debit Plus Charges
Charge Code	237135	Debit Plus Charges
Profit Centre Cust	No	
Return To Dept	No	
Feed Funds	No	TRADING POSITION
Position Type	TR	
Amount Debited	MWK 6,440.14	
Amount Credited	MWK 6,440.14	
Credit Comp Code	MW-001-0005	CHICBRI
Debit Comp Code	MW-001-0004	VICTORIA AVENUE
Loc Amt Debited	6,440.14	
Loc Amt Credited	6,440.14	
Cust Group Level	99	
Debit Customer	237135	
Credit Customer	142092	BWB ATM BILL PAYMENTS ACC
Dr Advice Req'd Y/N	N	
Cr Advice Req'd Y/N	N	BWB ATM BILL PAYMENTS ACC
Charged Customer	142092	
Tot Rec Comm	0	
Tot Rec Comm Lcl	0	
Tot Rec Chg	0	
Tot Rec Chg Lcl	0	
Rate Fixing	No	
Tot Rec Chg Crncy	0	
Tot Snd Chg Crncy	0	
Auth Date	28 NOV 2016	28 NOV 2016
Round Type	NATURAL	Natural Rounding
Stmt Nos.1	178643203935118.00	
Stmt Nos.2	1-2	
Stmt Nos.3	MW0010004	
Stmt Nos.4	178643203935118.01	
Stmt Nos.5	1-2	
Stmt Nos.6	MW0010005	
Stmt Nos.7	178643203935118.02	
Stmt Nos.8	1-2	
Curr No	1	
Inputter.1	32039_SMS BANK INP.01_OFS_NBMSMS	
Date Time.1	27 NOV 16 09:45	27 NOV 16 09:45
Authoriser	32039_SMS BANK INP.01_OFS_NBMSMS	
Co Code	MW-001-0001	NINT LTD
Dept Code	E	Implementation

<http://192.168.1.12:9090/BrowserWeb/servlet/BrowserServlet>

2. Mo626ice statement showing that MK6, 440.14 was deducted from the bank account on 28 November 2016.



3. Customer account statement from BWB as of 1 December 2016. The statement shows that the customer have not yet cleared the MK6, 440.14



Water is Life

Pay for it



Report faults, pipe bursts, vandalism or illegal connection on our **toll free number**
8000 2000 (MTL Only)

BLANTYRE WATER BOARD

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Monday, 28 November 2016

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Account Number: XXXXXXXXXX

Account Name: XXXXXXXXXX

Current Balance: K5,440.14

Transactions for the last 3 months

Date	Receipt #	Description	Amount K
02/11/2016	32260342	Receipting - Consumption	-6,000.00
31/10/2016		Invoices-Water - Water Charge Consumption: 12.0 Rdgs: 197.0 (30/09/2016) - 209.0 (31/10/2016)	5,760.00
31/10/2016		Invoices-Water - Meter Rental Charge	500.00
31/10/2016		Invoices-Water - Meter Reading charge	300.00
30/09/2016		Invoices-Water - Water Charge Consumption: 6.0 Rdgs: 191.0 (31/08/2016) - 197.0 (30/09/2016)	2,460.00
30/09/2016		Invoices-Water - Meter Rental Charge	500.00
30/09/2016		Invoices-Water - Meter Reading charge	300.00
07/09/2016	14164303	Receipting - Consumption	-10,200.00
31/08/2016		Invoices-Water - Water Charge Consumption: 4.0 Rdgs: 187.0 (31/07/2016) - 191.0 (31/08/2016)	1,909.25
31/08/2016		Invoices-Water - Meter Rental Charge	500.00
31/08/2016		Invoices-Water - Meter Reading charge	300.00
30/08/2016	10191487	Receipting - Consumption	-2,000.00

[3 months](#)
[6 months](#)
[9 months](#)
[12 months](#)

2016

[October](#)

[September](#)

[August](#)

[July](#)

[June](#)

[May](#)

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Updating Customer Account Details

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Viewer No: 36450



Appendix 6 Escom website helpdesk scenario

1. ESCOM website for a query

PREPAID UNITS MOBILE PAYMENT METHODS

Applying For New Connection

To apply for a new connection, visit any Customer Care Centre or ESCOM office where you will be required to Fill an Application Form. Customer Service staff will assist you to fill the form where you have problems.

[Read more >](#)

Selling of LED Bulbs

ESCOM is now selling LED bulbs in Exchange of Compact Florescent Lamps or Incandescent Bulbs (IBs) to its customers at K500 each.

[Read more >](#)

Fault Reporting Centers

Report Electricity faults to your nearest fault reporting center across the country in **Southern, Central** and

Prepaid Units Selling Points

ESCOM customers can buy Electricity prepaid units at PUMA Filling Stations, PTC's, Chipuku Shops, ESCOM

BALANCE ENQUIRY

Pre-Paid

Post-Paid

Please Enter Your Meter number below to query your Prepaid Tokens

LATEST NEWS

2. Detail payment report is display as below:

PREPAID TOKENS

Prepaid Tokens for Meter Number [REDACTED]

You are here: [Home](#) > [Customer Information](#) > [Balance Enquiry](#) > [Prepaid Tokens](#)

Report Summary

TITLE	FIRST NAME	LAST NAME	ADDRESS LINE 1	ADDRESS LINE 2	ADDRESS LINE 3	TOWN
	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]		[REDACTED]

Report Details

#	RECEIPT NO	TRANSACTION DATE	EXPORT TABLE	TOKEN NO	UNITS	AMOUNT
1	836761	01/05/2017 11:11 38		01108215235765633321	20.90	1,000.00
2	833274	30/04/2017 09:02 21		61678658162387244489	114.30	5,500.00
3	757529	02/04/2017 10:36 32		66936919052719569802	114.30	5,500.00
4	670851	26/02/2017 08:25 01		12247604906206940899	114.30	5,500.00
5	613062	01/02/2017 09:50 57		22001026678066432821	83.10	4,000.00
6	1950622	23/01/2017 08:51 12		00408060299920471598	10.50	500.00