

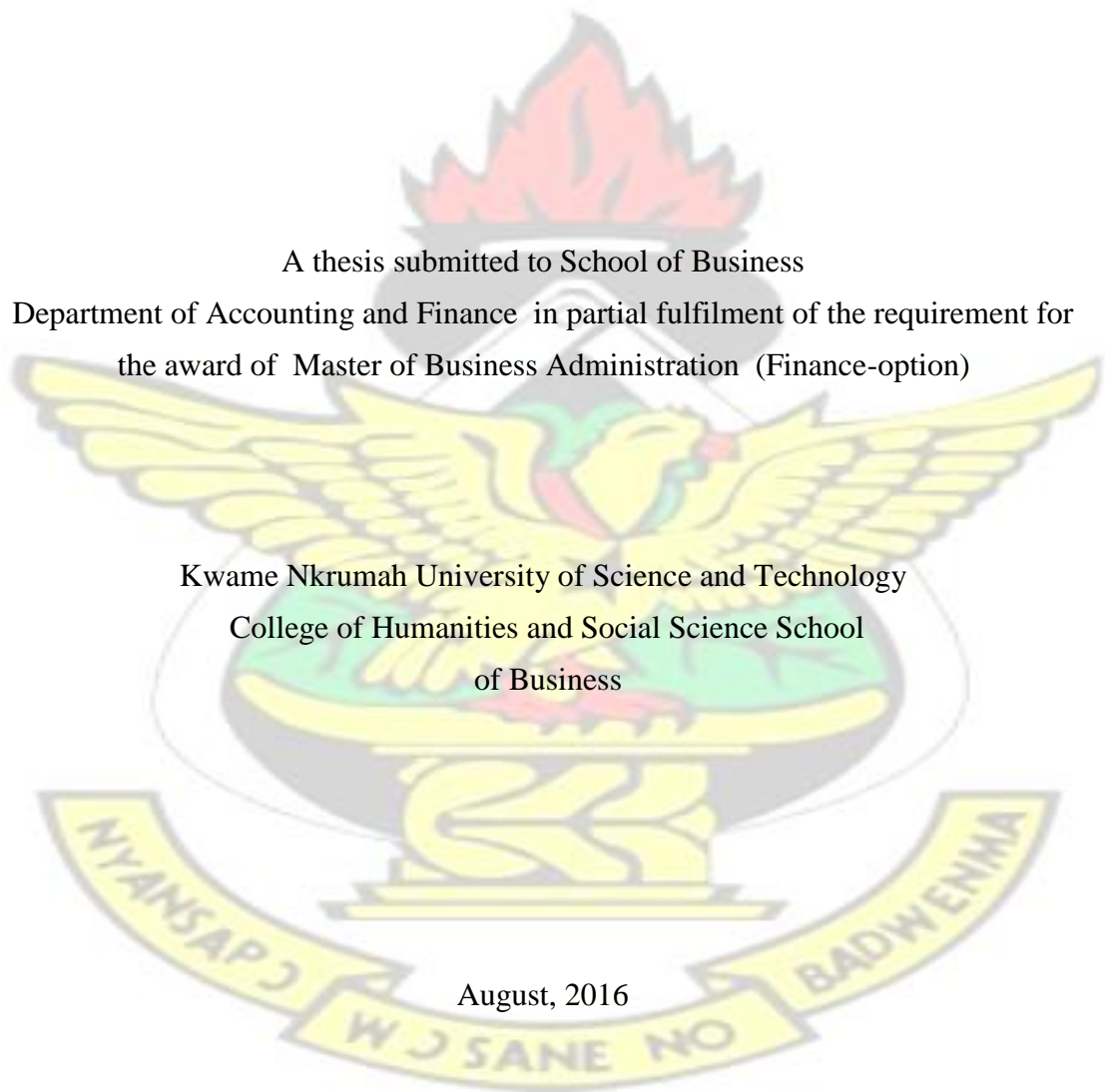
**THE ROLE OF MOBILE MONEY IN ENHANCING CASHLESS SYSTEM IN
GHANA, THE CASE STUDY OF MTNGHANA**

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A thesis submitted to School of Business
Department of Accounting and Finance in partial fulfilment of the requirement for
the award of Master of Business Administration (Finance-option)

Kwame Nkrumah University of Science and Technology
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of Business

August, 2016



DECLARATION

I hereby declare that this submission is my own work towards the Masters of Business Administration and that, to the best of my knowledge, it contains no material previously published by another person nor material which has been accepted for the award of any other degree of the University, except where due acknowledgement has been made in the text.

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DEDICATION

This research is dedicated to my Creator and Sustainer Allah for His unconditional love.

To my children for endless and true love

KNUST



ACKNOWLEDGEMENT

All Praise belongs to Allah alone. I Praise, Glorify, Honor and Thank Almighty Allah for gift of strength, guidance, protection and grace for all these years of my life. He is my source of provision and comfort and I give him all adoration and appreciation. My inestimable indebtedness and thanks goes to my supervisor, Mr P.K Oppong for his prompt response to my write-ups, relentless advice, suggestion, supervision and criticisms led to success of this study.

I again acknowledge Shiraz Inusah my colleague and a brother, whose advice and review of this thesis work contributed immensely to its success.

To the special and important people in my life – my Husband and children, thank you for all the sacrifices, prayer and support, May Almighty Allah bless you abundantly. Also especial thanks to my parents and siblings for your constant advice and prayers, you are the best.

Finally, I wish to thank the staff and Managers of MTN Ghana, for allowing me and providing me with all the necessary data to complete this work.

To all and sundry who contributed in making this work a success, I say God bless you all.

ABSTRACT

This study sought to assess the impact of mobile money in enhancing a cashless payment system in Ghana. The research approach used was triangulation, that is, both qualitative (through interview) and quantitative (through questionnaires). A descriptive research design was also adopted for the study. The population comprised the management of MTN mobile money, and customers in Ghana. Purposive and convenience sampling techniques were used in selecting 1 management member and 500 customers of MTN mobile money. Data was collected from primary source by administering questionnaires and conducting interviews. After the study, it was concluded that, almost all MTN mobile money customers use MTN communication system. The majority of the mobile money services are less than 5 years old with MTN, with savings as the major reason for operating the mobile money account. Other reasons for operating include bill payment, to buy airtime, and for general payment. Mostly, clients used the mobile money service once every month. The performance of MTN mobile money grew from year to year (2012-2014) in all three areas (number of clients, number of transactions, and the monetary value of transactions). Over 5000 customers join the MTN mobile money weekly. Generally customers were satisfied with the MTN mobile money services. Customers agreed the service was secured, convenient, easy to operate, reliable and fast. By reason of the satisfaction, they were willing to recommend MTN mobile money services to family and friends. However, network and system challenges were the most significant limitation to the operation of MTN mobile money service (from customers' perspective). It was recommended that MTN develops a more attractive promotional package that suits females and the older generation. MTN must also pay critical attention to network problems, since that significantly affects customers' patronage.

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CHAPTER ONE

INTRODUCTION

1.1 Background

According to Asokan, et. al., 2000, there has been an improvement in the value transfer system, since the evolution of barter, through bank notes, payments orders, cheques, and later credit cards. Now, attention has been shifted to the mobile payment systems which enable transaction via the phone and other mobile telecommunication devices. In the past, barter system was also used. It involved the direct exchange of commodities and led to markets creation, and specialism. However, the barter system was short lived because it required that double coincidence of wants existed before any transaction was carried out. This situation called for different forms of money. Commodity money, gold standard, and fractional reserve were introduced as money and much later the legal tender. According to Boughton & Wicker, 1975; Autrement, 2007, trial and error processes were used in finding the right monetary form which could capture the benefits in exchange and decrease the costs of transactions.

There is enough literature to confirm the development of a cashless economy, where paper money is replaced with electronic payment system which will make use of technology. With the discovery of internet, and the development of new payment system- the electronic account systems, paper money use has been reduced somehow, as money functions as a unit of account.

Money simply is a „veil“ if it does not perform its core functions of medium of exchange, store of value, standard of deferred payment and unit of account. With money, transaction can simply occur between two people.

According to Ajayi and Ojo (2006), development of a national economy is important first of all by encouraging a payment system that is secure, convenient, and affordable. According to Humphrey, D. B. 2004, developed economies are gradually swaying away from outmoded paper payment systems to new and improved electronic payment systems (for example, payment cards). In these economies, it is possible to make payment by simply dialing a number on using a phone. Online and offline trade transactions for payment settlement as well as mobile transfer services are also now possible with the emergence of e-commerce and e-payment systems. The world has experienced an improvement in electronic payment systems that are meant to facilitate trade and simplify payment.

This chapter introduces the innovative processes adopted by the telecommunication industries, in Ghana especially Mobile Telecommunication Network (MTN) operation of cashless mobile banking. Attention will be on the role of mobile money and the satisfaction derived by customers from using the MTN Mobile Money facility. Findings on this research will help advice policy options on how to improve the use of cashless system in Ghana.

Electronic payment system should be way forward as it is cost effective, and gives detail payment solutions. According to the Federal Reserve Bank of New York (1996), electronic payment systems are intended to help customers and companies reduce and eradicate some of the problems associated with the traditional settlement and payment processes.

The EPS has the potential of tracking customers' expenditure as well as helping banks to design their products to meet customers demand. Government also uses the EPS

information when making economic decisions. On real global GDP growth, it was observed that an extra 0.2% a year on average was generated. This was as a result of the use of card payment system (Moody's Analytics, 2010). Humphrey, 2004 reported that by late 1980s, the use of cash to pay for consumable goods in the U.S.A experienced a decline. This was not the case of Less Developed Countries (LDCs) including Ghana which are still undergoing major transition from a pure cash economy to a cashless economy.

Eureka moments, 2009 asserted that the use of the mobile phone has proven to be an effective tool for development in recent years, especially in the Developing World. Economic growth in Sub-Saharan Africa, coupled with high mobile phone penetration rates, has given hope to policy advisors regarding cost-effective technological communication systems such as the mobile phone. Banks in Ghana are making huge investments in technology in order to improve their infrastructural base so as to meet the increasing demand by their customers for electronic banking services.

Online retail banking service makes it possible for individuals and institutions to take advantage of new technologies at a quite reasonable cost (Abor, 2004). Electronic payments are gradually replacing cash payments with the help of technology. Many of such new payment systems such as cards, telephone and the internet have come to being in recent years, and are based on technical modernizations. (Abor, 2004).

It is estimated that, 5.3 billion people in the world now are mobile phone users, but there are still calls for alternative uses of the mobile phone than just making and receiving calls. It is now possible to run businesses using the mobile phone. One of such use of the mobile phone is the mobile money transaction, which involves transferring money

from one phone number to the other. These come with low cost, faster speed and improved confidence that accompany such mobile money transactions. Mobile money transfer has made it possible for people without phone and bank account to do financial transaction. Apart from its convenience and safety; mobile money service has a substantial number of economic benefits. It reduces the risk associated with cash handling and also printing costs. With the introduction of mobile payment system, customers can now pay their bills without having to really move to the office premises of utility service providers. Moving from a society where most of cash is held outside of the banks to a cashless society is a big challenge for the government, financial institutions, and individuals.

A cashless society will reduce crime rate in the country, and other risk that come with handling money for transaction, speculative and even precautionary purposes.

1.2 Statement of Problem

Making payment for goods and services in Ghana through the banks is characterized by lengthy waiting time, long distance traveling which affect businesses and ultimately economic development (Sarpong, 2003). Payment for utility bills, payment for goods and services, and money transfers has been a major nuisance for both individuals and firms. This has the potential of reducing business activities and huge debt to most of the utility providers. In fact, Ghana is yet to realize the full benefits of technological developments in electronic payment services such as the use of cards, automated teller machines (ATM), the internet, mobile phones, and etc.(Sarong, 2003). Payments and clearing system in Ghana is still underdeveloped. For instance, cheques issued in Accra against accounts held in banks in Accra but across banks could take three days whilst cheques drawn on across regions can take several weeks.

This is as a result of lack of a central clearing system to clear debit card transactions between banks in Ghana. This certainly cannot be the case in developed countries like U.S.A, Japan and China.

Against the backdrop of these challenges, coupled with the need to not only develop but also maintain a cashless economy, new payment solutions have been introduced so far in Ghana, notable among which is the mobile money payment system which can combine speed as well efficiency, so that, the days of waiting in long queues at the banks for salaries and transfer payments effected by family and friends are a thing of the past. Whether consumers are adopting the current and emerging payment mechanisms is another issue confronting the system. As can be said, Mobile Payment System, which is a new platform in Ghana, has low patronage, as it has not yet gained wide acceptance among the populace, for various reasons, that would be explored in this paper.

MTN's brand is the most valuable in African and is ranked in the top 100 brands worldwide. MTN Ghana is the most sought after telecommunication network provider and constantly innovating services so customer can enjoy better. MTN's overriding mission is to be a vehicle for Ghana's economic growth and development, helping to promote Ghana's strong development potential from the provision of world –class telecommunications products and services through to innovative and sustainable corporate social investment initiatives. Since the inception of Mobile money in 2009, there has been intensification in the registration of customers on the service. MTN has gone it way to intensify and educate customers on the service and customers have now become receptive to it. It is against this background I chose MTN Ghana. With over 15million subscriber base and almost one member of a house hold in Ghana is on MTN

mobile money and coverage is also incomparable to the other

telecommunication networks in Ghana.

The problem here is that, comparing Mobile Payment Systems to the traditional cash or cheque payment system, Mobile Payment System is a bit complicated as it requires knowledge in the use of a mobile phone and there are security related issues such as obtaining and remembering a four digit pin code that will enable the user to be able to transact with the mobile payment system. Also, Mobile Payment System requires that the subscriber or the user is at least semi-literate since its security features must be known to only and only him (Subscriber).

1.3 Research Objectives

The main objective of the study is to assess the role of mobile money Service in enhancing a cashless payment system in Ghana with specific reference to MTN mobile money. To achieve this, the following specific objectives are set:

- To identify the percentage of customers on MTN using the mobile money payment system in Ghana.
- To assess the volume of transaction on MTN mobile money payment system within Ghana for a period of three years.
- To assess the level of customer satisfaction on mobile money system.
- To analyze the challenges facing customers using mobile money system.

1.4 Research Questions

This study aims at addressing the following the questions:

- What percentage of customers on MTN network is using the mobile money payment system in Ghana?
- What is the volume of transaction on MTN mobile money payment system within Ghana the past three year's period?
- What is the level of customer satisfaction on mobile money payment system?
- What are the challenges faced by customers who use mobile money system?

1.5 Scope of the Study

The study will concentrate on mobile money payment systems with emphasis on the benefits it gives to consumers. It is not likely to capture all the significant details about an entire payment application but an insight into a selection of these payment systems will necessary as it will help people to understand different payment systems in relation to in other that they may choose any system that they are familiar with. Due to large numbers of different payment schemes, it is necessary to limit this scope schemes used by MTN Ghana during the period from 2012 to 2014. This study is not intended to cover a comprehensive survey of all developments in the field of electronic retail payments nor the issues relevant to its developments, but rather focus on current developments of mobile money system. Problems and proposed solutions will also be provided at the end of the research work. The focus is on MTN Mobile Money because MTN Ghana has the largest number of subscribers of over 29,990,581 as at September, 2016 according to the National Communication Authority (NCA) and its coverage is wider as compared to the other networks (Vodafone Ghana, tiGO, Airtel, Glo Ghana).

1.6 Justification of the Study

The research is investigating the role of mobile money payment system in enhancing a cashless system in Ghana. MTN mobile money improves access to financial service delivery in Ghanaian society and thus the risks associated with carrying huge sums of money on the individual with or without bank account. This study has important implications for financial services delivery for Ghana and beyond. From academic point of view, this study will present additional evidence concerning the search for an optimal financial payment system in Ghana. In practice, it will help to document the performance of economies that employ improved payment systems against those that do not. Moreover, the study will afford policy makers“ knowledge on which options of payment system is appropriate under certain circumstances. This project creates an opportunity to obtain feedback from customers regarding the challenges they face in using MTN mobile money.

1.7 Organization of the Study

The study is organized into five chapters. Chapter one, provides the background of the study, looks at the problem statement and continues to state the research questions and objectives. This chapter also includes the significance of the study, scope and organization of the study. Chapter two focuses on the review of relevant literature concerning the study. Chapter three is devoted to the methodology and research design employed for this study including the analytical method used for the study. Chapter four covers a detailed analysis of the results as well as discussion of findings.

Chapter five presents a summary of findings of the study. It will also include conclusions and recommendations of the study.

CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction

This chapter is divided into different sections. It starts by looking at, electronic payment system, form of electronic payment system, international payment system and the role of mobile money to the development of the economy. In addition the review also looks at the benefit and challenges of the mobile money system.

2.1.1 Electronic Payments System

The World Bank, defined “payment system as the infrastructure (comprised of institutions, instruments, rules, procedures, standards, and technical means) established to enable the transfer of monetary value between parties discharging mutual obligations”. According to Dr. Hallam-Baker, facilities of existing credit card payment serve as platforms through which card payment schemes are carried out.

Basel Committee, 1998 and BIS, 1996, noted that, with a shift towards electronic money system, which blends technological and economic features the definition of a payment system becomes very difficult.

According to Agimo (2004), electronic payment system is “direct payment by credit, transfer of electronic credit card details, or some other electronic forms, as opposing to payments by cheque and cash”. It can also thought of as a payer’s transfer of a monetary claim on a party acceptable to the beneficially (European Central Bank, 2003).

Pariwat and Hataiseere (2004) found out that, in order to achieve effective and efficient retail payment systems, there is the need to take into account issues of convenience, security, reliability, quality of the payment method.

Though many scholars have attempted to make meaning out of cashless system or ebanking, none has given credence to cashless banking implications to emerging economies. Translating findings of cashless studies from one country to another is often difficult. Over the counter payment system is different across countries as a result of historical and legal variations (Daniel et al, 2004).

Humphrey and Berger (1990) estimated the private and social costs for nine separate payment instruments namely, cash, cheques, credit cards, money orders, point of sale (POS), Automated Clearing House Transfers (ACH), ATM bill payments, travelers' cheques and wire transfers. They concluded that, from a social cost perspective, cash is the cheapest payment instrument and the hierarchy descends from ACH, POS and ATM bill payment.

2.1.2 Forms of Electronic Payment Systems (EPS)

Life would have been much easier if the introduction of an electronic payment were to be embraced by everyone. The transfer of money from one mobile account to the other is quick and very easy.

- Electronic cards: These cards are designed to contain one's bank account. They include credit card, debit card or prepaid card.

With this card, an account holder is able to withdraw or check his balance without necessarily entering the banking hall.

Credit Cards: This is a type of electronic card that enables the card holder to do transaction especially on the internet.

- Debit Card – This card is made up of a plastic design which contains a customer's information and can be used to withdraw or check account balances. It comes with a PIN which the customer alone is privy to unless he/she decides to give it to a third party.
- Internet banking: this unique payment system allows online transactions through direct transfers from one bank account to another or by the use of ATM machines.

Other types such as online banking systems exist but this system is very slow on the rise.

2.1.3 International payment system

Various countries use different systems of electronic payment. Financial intermediaries with the help of the internet offer these electronic payment services in the market. In a survey conducted by Pango in 2003, it was found out that of all worldwide e-commerce transactions 94.1 % were conducted using credit cards. This is specifically the case of the developed economies, for example, in the U.S.A credit cards remain the most dominant online payment method. Only 50% of customers outside U.S.A. use credit cards for online purchase (Landon & Traver, 2002). Australia has the strongest platform for e-payment system according to internet banking report.

Europe, more especially in U.K and other developed countries like Canada, Italy, Norway and some countries in Asia like China, Japan, Singapore and Thailand have also witnessed a rise in the use of smart cards, while developing countries like India

still rely more on electronic funds transfer. Recent studies by Nielsen supports this fact as India emerged as the third biggest credit card users globally for online purchasing with a percentage of 84% , next only to the Turkish with 91% and Irish e-shoppers with a percentage of 86%.

Poor and developing countries still rely on cash and cheque payment systems for their banking transactions and this is because of poor infrastructure facilities, poor economic conditions, and high illiteracy rates among others. For example, Kenya has less than 1,000 ATMs in the country according to the National payments System survey and CBK Annual report of 2007.

There is the need to improve online payment methods through strong economic and social conditions, legal regimes and information communication technological infrastructure in less developed countries.

Credit card has its own disadvantages as well: it erodes the profit margin, of customers when they use it for online transactions. This is as a result of high service charges from banks on the use of credit cards. This notwithstanding, buyers would still prefer to use credit card payment system, especially when making expensive and bulk purchases or any transactions.

2.1.4 Empirical literature review

Gali, 2008 stated that in a cashless economy, an equation for money demand can be derived without influencing output and inflation. What this means is that, as money functions as a unit of account the only amount of real money balances is the residual after output, inflation and interest rate variables are accounted for.

In trying to find out the cost implications of cashless banking, Gresvik and Owre, 2002 experimented using Norwegian banks. The study found that cash withdrawals at ATMs using the payment cards system cost considerably more to the customer since the transactions involve cash replenishment, maintenance fees and that of security costs. Their study also found that it is three times more expensive using cheques for cash withdrawals than cash withdrawals at ATMs.

De Grauwe et al (2000) made some comparative statics on costs using different countries, by examining the costs of cash and payment cards in Iceland and Belgium. These two countries were selected based on the fact that, they provided a clear contrast against one another. Iceland at the time had one of the lowest rates of cash usage while Belgium had the highest rates of cash usage. For instance, with the cash payment system in Iceland, the study estimated the cash production and distribution costs that the Central Banks incurred and then subtracted the revenues the Central Banks obtained through interest foregone on cash that was in circulation at the time. Whereas, for the card-based system, they examined the card companies, thus the commercial and saving companies.

The conclusion drawn was that a card-based system is considerably more efficient than a cash-based system from social perspective.

It is evident from the above discussions that cashless economies are increasingly important in both developed and developing economies.

2.1.5 Mobile Money Payment

“Before mobile phone banking takes place one needs to make use of devices such as mobile phone, personal digital assistant, Telecommunication Network to initiate a

transaction, such as purchasing, and finalize transaction by authorizing payments for goods and services and also to facilitate banking services such as money transactions/transfers, and other financial services linked to a customer's bank account" (Diniz, Porto de Albuquerque & Cernev, 2011, p. 5). Mobile Money Payment System is another form of electronic payment system, but in this case, financial transactions are carried out with the help of a mobile phone. Cell phones with Mobile Payment technology was first introduced in Singapore in 2001 and later in Japan in 2004. Over five million wallet cell phones were sold within the first year of its operations on the market. The vision of mobile payment service at the time was to transform the mobile phone into a "future wallet". The operation of mobile payment service can be described in five ways. Namely: Mobile Web Payment (WAP), Contactless, SMS, Billing Payment and Near Field Communication (NFC).

A mobile payment is paying for a product or service using mobile technology (International Telecommunications Union, 2011).

There is clear difference between the activities customers perform using mobile banking from payments made by customers via mobile phone. Without the enabling framework of a mobile banking system, mobile payment services would not exist.

Thus, for the purposes of this study, the term "mobile banking" will be used to describe the activities of both activities. A customer does not need to use devices such as modems, point of sale terminals, and card readers for mobile payments but rather just a mobile phone (Zika, 2005).

According to Costello, (2003) for further developments in the mobile payments system, micro-payments such as tickets, parking and buying airtime the mobile phone could be

used. SMS banking are now been provided by most banks in Ghana and customers are now able to do transactions with their mobile phones without visiting their bank branches.

Almost all the telecommunication service providers in Ghana now provide money transfer services. They include; Tigo cash, MTN mobile money, Airtel money and now Vodafone.

2.1.6 MTN Mobile Money

In July 2009, MTN Ghana launched a Mobile Money cash management service called MTN Mobile Money. MTN Mobile Money is a faster, simpler, and more convenient, way of transferring money, making payments and other transactions by the use of the mobile phone. MTN together with 10 banks in Ghana partner to offer this service. MTN Mobile Money can be used to send and receive money, make payment anywhere – with the use of mobile phone or the internet. Money can easily be sent to family and friends using Cash out at any Authorized Mobile Money Merchant. The partner banks that offer mobile money services in Ghana include; Ecobank, Fidelity Bank, GT Bank CAL Bank, Stanbic Bank, Zenith Bank, UBA, Merchant Bank, Access Bank, and the Agriculture Development Bank.

Partner Banks open and own Mobile Money wallets and this service is currently reserved to MTN Ghana customers only.

2.1.7 Demands by the Customer.

According to Keynes in his Liquidity Preference Theory (LPT), people demand money for three main reasons. They are; transaction motive, precautionary motive and

speculative motive. Transaction motive is where customers hold liquid cash to carry to meet day-to-day transactions. Where customers hold cash emergency purposes, it is termed as a precautionary motive whereas, Speculative reason for holding cash according to Keynes is for them to be able to invest and gain the benefits that come with such an investment in the presence of risk (Eggertsson, 2008). The availability and use of ATM's and electronic payment, systems, demand for debit cards are on the rise. Shy and Tarrka (2002) discovered that debit cards are used for making more expensive transactions whereas; customers use cash for smaller transactions. They identified transaction cost to the customer as a critical factor that affects customer purchases. They concluded that cash was the most common and readily acceptable method of payment. In a similar research by Brits and Winder (2005), they uncovered transaction costs associated with different payments methods be made known to customers. Although it is unsafe to carry cash as compared to debit card, cash remains the most universally accepted method of payments.

A survey conducted by Canadian banks argued that, although it is safe to use electronic payment, it is wise to hold cash since it will be easier to retrieve stolen cash physically than if a customer's financial information was been hacked. However, Humphrey, (1996) thought otherwise and stated that cash handling was negatively correlated with crime levels.

2.1.8 Benefits of Mobile Payment System to Customers

To some analysts, mobile phones use an embedded chip and can be used to store value and authorization does not rely on a card reader. As such, mobile phones should replace smart cards as a means of payments. This makes mobile payment system an essential payment alternative and has the potential of driving the economy toward a cashless

society. A point worth noting is that, it is cheaper to own a mobile payment system. The development of mobile payment system in various countries such as Japan, South Africa, Ghana, and Philippines do not necessarily require users to have a mobile phone before they can benefit from such services such as mobile money transfer (MMT). This is made possible since they can send their money through an authorized dealer of a Mobile payment service provider.

To reduce rate of criminal activity and to ensure that world is a better place to be, there is the need to develop a cashless society. Paper money in the form of cash is traceable, not easy to hide, could be stolen but a mobile payment system is safe if even a mobile user loses his mobile phone.

Studies have shown that paper cash has perpetrated a lot of criminal activities in many societies. However, a cashless economy has the potential to reduce or eliminate criminal activities. Cash businesses such as all illegal enterprises, drug trade and human trafficking would be disrupted in a cashless economy. The risk of transferring diseases is also reduced since there would be less contamination of bank notes and coins. Cash has been identified as a medium of diseases transmission hence citizens will be less exposed to diseases if a cashless economy is embraced. Mobile payment system has some practical advantages to consumers since it can be found everywhere including remote villages. Long queues are avoided as in the case of banks, it saves time, and is reliable when there is network service. To the banks, cashless society means cost savings. This is because; only a few assistants are needed to assist at selfservice centers. This is different in the case of government and society. The reason being that, cashless society means jobs cut and which has the potential of increasing crime and insecurity in a country.

2.1.9 Risks and Challenges of Mobile Payment System

Lack of sensitization and higher rate of illiteracy is a major challenge in Ghana, especially in the northern part. Inadequate education on cashless system coupled with poor enlightenment of bankers and customers on different aspects pose a serious challenge to the success of electronic payment system. Before the cashless policy scheme was launched, strategies for marketing the project were high on the agenda. For example, According to Kennickell and Kwast (1997), education plays a key role in determining a household use of an e-money product. Their conclusion based on the U.S market showed that market for e-money was highly specialized. the demand for such products come from higher income groups, and more educated households that have high financial asset accumulation.

Studies have shown that customers with high level of education patronize electronic payment products more than less educated customers, but such electronic payment systems involved too many technicalities.

Technological improvement and high cost involved in the adoption of electronic payment systems by both consumers and service providers present another challenge to the mobile payment system. Despite its unique features, Mobile Payment System is still not commonly accepted in Ghana, as in the case of Japan, Korea, Malaysia, Kenya, and South Africa. This survey tries to find out the role of mobile payment system in enhancing cashless system in Ghana. Issues of compliance procedures by banks, operators and regulatory authorities, Internet access on mobile phones („data traffic jams“) will be looked at.

Eavesdroppers, hackers, and cyber-criminal will now shift their attention to mobile phones due to their expectation that there will be an increase in the number of customers using mobile payment system.

2.1.10 The use of Mobile Payment System in addressing the limitations of Cash, Cheque and Card Payment

The necessity for coins and cash in small and large transactions is being reduced in a cashless economy with the introduction of mobile payment system. In using mobile payment system, the burden of carrying large sums of money is reduced. Mobile Payment System is secure since a PIN Code is provided to the customer unlike the cash system. Payments cannot be made, unless the PIN code is known by the unauthorized user even if handset is stolen. Mobile money service is more desirable than cash because of its; efficiency, convenience and security. Fraud issues such as cheque signature forgery will also not arise since there will be no need for cheque issuance when carrying out a mobile money transactions. Also, customers in remote areas and long distance areas can use mobile payment service, since it facilitates a quick and secured movement of money across places unlike having ATM machines in such places that banks are not accessible. Mobile money service is independent of place and time, regardless of one's location.

In addition there is prevention of long queuing with Mobile Money Service Unlike at a bank where customers queue for transaction to be carried out.

2.1.11 The Role of Mobile Money in Enhancing Financial Inclusion in Ghana.

Financial Inclusion (FI) has become a key pillar of development policy in a number of countries around the world on account of the fact that exclusive development is not sustainable. The exact conceptualization and operationalization of Financial Inclusion (FI) varies across the globe from country to country (Rahman, 2009). Irrespective of these variations, at its basic, FI means reaching out to the under-banked and unbanked citizens of a country with a view of providing them with appropriate, adequate, affordable, and timely financial services such as accounts, credit, and insurance amongst others. The term Financial Inclusion [FI] or Financial Exclusion [FE] was coined by geographers in 1993 who were concerned about limited physical access to banking services as a result of bank branch closures (Leyshon and Thrift, 1995). Analysis of literature reveals that the conceptualization can be divided into two facets, that is, the narrow and broad approaches.

Narrowly, FI refers to the delivery of appropriate, timely, and adequate financial services at an affordable cost to the vast sections of under privileged and low income groups (Nagadevara, 2008; Sarma, 2008; Leeladhar, 2005). Implicitly, Mohan (2006) concurs and observes that FI signifies the access by certain segments of the society to appropriate, low-cost, fair and safe financial products and services from mainstream providers. Similarly, the United Nations (UN) define FI as easy access to safe savings, appropriately designed loans for poor and low-income households and for micro, small, and medium-sized enterprises, and suitable insurance and 7 payment services (United Nations, 2006). Financial Inclusion implies provision of affordable financial services such as access to payments and remittance facilities, savings, loans, and insurance services by the formal system to those who tend to be excluded (Nagadevara, 2008).

Broadly, the Scottish Government offers a comprehensive definition of FI when it refers to it as a process of individuals having access to appropriate financial products and services including having skills, knowledge, and understanding to use them (<http://www.scotland.gov.uk/Topics/People/SocialInclusion/17413>).

The stark reality is that most people in the world still lack access to sustainable financial services, whether it is saving, credit, or insurance. The great challenge before us is to address the constraints that exclude people from full participation in the financial sector so that together, we can and must build inclusive financial sectors that help people improve their lives. The introduction of Mobile Money Payment System has included all persons in Ghana into the financial system with innovation in ICT among others. The Mobile Money service , from the basic cash transfer platforms through to full – scale saving and credit facilities have helped to broaden financial inclusion , connecting the poor and remote households to the formal financial services to an extent that far exceeds the capacity of traditional financial systems . An increasing number of researches are beginning to suggest that new financial inclusion is changing the economic ways that directly enhance the welfare of the poor. The most noticeable evidences comes from Jack and Suri (2014) who show that access to Mobile Money services allows poor households to efficiently smooth consumption in the face of adverse income shocks, but there is again a growing number of evidence that suggest that Mobile Money is directly supporting household saving and capital accumulation

2.1.12 Conclusion

Notwithstanding the numerous gains made by mobile money payment system, there is the need to address challenges faced by mobile money service provision.

Ghana needs clear policies and regulations that would be binding on players in the sector so that, the benefits of a cashless economy will be achieved. There should be a national policy encouraging more mobile money registration and transactions as well as discouraging the use of physical cash in circulation.

The risks associated with transporting currency notes, by banks and individuals will be reduced if the cashless economy is effective and efficient in Ghana.



CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter presents the methodology employed for the study. It presents a precise description of the case study that was used. It explains the research approach, the population, sample as well as the sampling procedure and techniques adopted to achieve the objectives of the study. Also, it describes the research instrument used, validity and the reliability of the instrument, data collection procedures, and how the data collected was analyzed.

The study was aimed at assessing the role of mobile money in enhancing cashless system in Ghana, using MTN as a case study.

3.2.1 Research approach

Quantitative research is a free-format response and provide in depth information obtained from cases. The result is also use for explanatory information. To obtain or gather data on views and ideas and represent them in numbers, the researcher can use Quantitative research. The results from quantitative research are analyzed and presented with the help of arithmetic and statistics. Dutka (1995, p 25 – 26) for any study to be successful discussing the choice of qualitative or quantitative research is not an either-or-situation, but the methods should balancing and must be put together so that individual strengths maximize. MTN Ghana has various offices for both internal and external customers to be served. It would be very interesting to study all these customers and their needs but wide area to be covered with in the limited time frame. The study population therefore needed to be limited. The target population for this study

was drawn from organizations that are stakeholders in the industry. This include selected MTN offices in regional capital in Ghana, the branch heads, some of MTN competitor and their customers.

3.2.2 Sources of data

Ghuri & Gronhaug (2005) assessed the differences among three major forms of research design. Thus; exploratory, descriptive and casual. The descriptive and the casual research designs are organized. An exploratory design comes in when a research problem is badly stated. The use of descriptive design here is to give a good account to the topic in question.

The exploratory aspect of this research was used to find out the role of MTN Mobile in enhancing the cashless system in Ghana. Data for the study was drawn from two main sources-primary and secondary sources.

Primary data are views, fact and data collected for the purpose of the study at hand (Rabianski, 2003). Secondary data according to Rabianski, 2003, are information collected from other sources like books, TV, documentary that is not directly gathered by the analyst. The facts and information collected are used for other study or investigation at hand and for some other purposes. Other researchers can use information collected by other researchers for their own purposes and the data can be used in other analysis well (Rabianski, 2003). One primary data can be another secondary data.

With respect to the primary source data was collected from key informants from the stakeholder of MTN, mobile money operators, agents who register the service and a sample survey was also carried out among the managers of the various offices.

Secondary source of data for the study was from annual reports of MTN, MTN website, bank of Ghana, journals brochures, finance text books and internet sources.

3.3 Sampling

Selected respondents for the study are sampled from MTN staff and customers of MTN Mobile Money service. The population for this thesis includes about 30% of the on net customer, payment systems. The customers identified included merchants and institutions like partner banks as well as individuals using mobile money system for transactions. The sampled included both mobile money user and non-mobile mobile users. A lot of effort will be made to maximize the completeness and quality of responses from these banks, merchants and individuals. In all, 500 MTN mobile money subscribers were sampled together with 1 management member.

3.3.1 Sampling Techniques

Based on the large nature of the population, stratified sampling technique was adopted. The population was divided in to five strata using simple random sampling techniques.

In addition in depth interviews were held with management of MTN, assisting customers in various priority areas (mobile money transactions like cashout, cash in, bills, topup). According to Kumar (2011, 148), the strengths and weakness of research method is very important in determining your choice of method either to use an interview or questionnaire in data collection, the two methods must be considered thoroughly. The findings and validity of the study depend on the choice of method used. The use of interview or questionnaire depends on the geographical distribution of population in the study area, the nature of investigation or study and the category of the study population under study (Kumar 2011, 148). Purposive sampling method was used

in this case because those selected were the ones who could provide the needed information.

3.3.2 Techniques of data collection.

Questionnaires were developed for the survey. Even though the population for this study was both illiterate and literate, the interview method was used in administering the questionnaire to the sample members of MTN this is because of the consideration that self-administered questionnaires have been noted to have comparatively poor response rate and sometimes inconsistencies. Face to face interview using the structured questionnaire are not only essential in this study but also give the researcher the opportunity to gather information using a conversational approach which is useful for further exploring issues behind statistics

3.4 Data Analysis

Attitudinal scale questions and open questions were questionnaire designed for data collection. In order to measure benefit and challenges of the Mobile Money service on the role of mobile Money service in enhancing the cashless economy, the respondents were asked of the questionnaire to evaluate the same statements used for evaluating quality customer service as well the overall performance of the service. Following attributes were used for the survey

- Data that yield itself to quantification was analyzed using computer software. Epi info. Statistical tools such as graphs charts. Percentages and tables were used to describe the data. The analysis of qualitative data was done manually.

CHAPTER FOUR

DATA ANALYSIS AND DISCUSSION OF RESULTS

4.1 Introduction

This study sought to assess the impact of mobile money in enhancing a cashless payment system in Ghana. This chapter contains the analysis of primary data gathered from 500 customers of MTN mobile money in Ghana and a management member. Analysis were made around the objectives of the study, thus to identify the percentage of customers on MTN using the mobile money payment system, to assess the volume of transaction on MTN mobile money payment system for a period of three years, to assess the level of customer satisfaction on mobile money system, and to analyze the challenges facing customers using mobile money system in Ghana. Mean, standard deviations, percentages and t-test were used in the analysis. This analysis was done with the aid of SPSS (v.17).

4.2 Demographics of the Respondents

Demographic refers to particular characteristics of a population. The word is derived from the Greek words for *people* (*demos*) and *picture* (*graphy*). Examples of demographic characteristics include age, race, gender, ethnicity, religion, income, education, home ownership, sexual orientation, marital status, family size, health and disability status, and psychiatric diagnosis. When designing a survey, the research needs to assess who to survey and how to breakdown overall survey response data into meaningful groups of respondents. And both assessments are based on demographic considerations.

Demographics helps determine whether you are actually reaching your target audience and whether or not you are gathering the information you are effectively seeking. Furthermore, if you aim for a representative sample of a population, knowing the distribution of the demographic characteristics of your respondents will help you in determining how close the sample replicates the population. If sample sizes are large enough, demographics enables you to differentiate between different subgroups. This segmentation might offer you insights that you would have missed by only looking at the aggregate data.

Table 4.1 Demographics

Demographics	Options	Frequencies	Percentages (%)
Gender	Male	345	69.0
	Female	155	31.0
	<i>Total</i>	500	<i>100.0</i>
Age	Less than 18yrs	15	3.0
	18 – 25yrs	225	45.0
	26 – 30yrs	135	27.0
	31 – 40yrs	105	21.0
	41 – 50yrs	20	4.0
	<i>Total</i>	500	<i>100.0</i>
Employment status	Self - employed trader	40	8.0
	Civil servant	95	19.0
	Student	230	46.0
	Office worker	50	10.0
	Others	85	17.0
	<i>Total</i>	500	<i>100.0</i>
Level of Education	PhD	10	2.0
	Master	55	11.0
	Bachelor Degree	120	24.0
	Diploma Certificate	150	30.0
	SHS	135	27.0
	Basic	30	6.0
	<i>Total</i>	500	<i>100.0</i>

Source: Field work, 2015.

Amongst the customers of mobile money sampled in Ghana, 69% were males, and 31% were females. Purposive sampling technique was used in selecting respondents. The basis of selection was being a customer of MTN mobile money and not based on gender. Therefore, as per the analysis, men were more users of MTN mobile money. Reasons not so clear, but generally men are more likely to save and transact through formal financial systems as compared to females.

With regards to the age distribution, 3% were aged less than 18 years, 45% were aged 18-25 years, 27% were aged 26-30 years, 21% were aged 31-40 years, and 4% were aged 41-50 years. From the distribution, the youth (below 30 years of age) dominated the clientele of MTN mobile money. Although the youth are more technologically savvy, mobile money is not so sophisticated to scare the older generation, and almost everybody above 18 years own a mobile phone in Ghana. The reason for the low patronage by the older generation may be because the sensitization has not gone down well with them. The customer base of MTN mobile money is dominated by students who control 46% of the population. This was followed by civil servants (19%), office workers (10%), and self-employed (8%). Other forms of employment also made up of 17% of the sample. The student dominated the clientele base because of its convenience. The demands of opening a bank account are more cumbersome compared to using mobile money. Even if you are below the age of 18, you cannot operate a bank account on your own, but that is not the case with mobile money. Usually, students do not also handle large sums of money, and do not therefore see a need to open bank account, if not for SSNIT loan. The analysis revealed that PhD holders who operated MTN mobile money constituted 2%, Masters constituted 11%,

Bachelor constituted 24%, Diploma constituted 30%, SHS represented 27%, and Basic also represented 6%. The study shows a dominance of the tertiary level education holders.

4.3 Percentage of Customers on MTN using the Mobile Money Payment

As part of the objectives, the study sought to ascertain the percentage of MTN clients who used the MTN mobile money service. All the respondents to this study used MTN mobile money services; however from the table 4.2, 92% of them indicated they used MTN mobile communication service. This shows that, the users of MTN mobile money are virtually the users of their communication service. Approximately 4% of the respondents used Vodafone, 2% used Tigo, and 2% used Airtel.

Table 4.2 MTN mobile money

Variables	Options	Frequencies	Percentages (%)
Mobile communication service	MTN	460	92.0
	Tigo	10	2.0
	Airtel	10	2.0
	Vodafone	20	4.0
	<i>Total</i>	500	<i>100.0</i>
Years of being MTN Mobile Money customer	Less than 1yr	135	27.0
	1 to 5yrs	295	59.0
	More than 5yrs	70	14.0
	<i>Total</i>	500	<i>100.0</i>
Purpose of MTN mobile money	For saving	250	50.0
	For bill payment	55	11.0
	To buy airtime	80	16.0
	For general payment	115	23.0
	<i>Total</i>	500	<i>100.0</i>
Regularity with sending money through Mobile money	Daily	80	16.0
	Weekly	175	35.0
	Monthly	245	49.0
	<i>Total</i>	500	<i>100.0</i>
	Daily	35	7.0
Regularity with receiving money through Mobile money	Weekly	155	31.0
	Monthly	310	62.0
	<i>Total</i>	500	<i>100.0</i>
	Yes	420	84

Awareness of MTN partnership with banks	No	80	16
	Total	500	100

Source: Field work, 2015.

From table 4.2 above, 27% of the respondents had been on MTN mobile money for less than a year, 59% between 1 to 5 years, and 14% for more than 5 years. Clearly, most of the clients had been with MTN for less than 5 years. This indicates that, the public is now receptive to transactions made on mobile money, as compared to when it was initially introduced. However, more must be done by the service providers in order to increase usage. For example, there was a time in 2015 where no one on MTN mobile money could either withdraw cash or deposit. This made customers skeptical and cautious.

Amongst the reasons for opening mobile money account, 50% of customers opened to save cash, 23% for general payment, 16% opened account to buy airtime (i.e taking advantage of extra bonus when you purchase airtime using mobile money), and 11% for the purpose of bill payment. It is quite impressive that, half of the respondents opened the account for the purpose of savings. This was what a user had to say:

We save, basically, because we can't predict the future. If we could, we would know precisely how much money we would need for the things that we want and need in the future. But because we cannot do this, the need to save money for the future is vital. When you think about money management, saving is great place to start. And I do not mean just saving a dollar here or there.

The output showed in table 4.2 above indicates that, 49% (the majority) of the respondents transferred money through mobile money every month. Approximately 35% transferred weekly, and 16% transferred daily. Just as the transfer, 62% (the

majority) of the respondents withdrew cash monthly, and 31% withdrew on weekly basis. MTN has gone into partnership with banks like GCB and Cal bank. Customers were asked if they were aware of some of these partnerships. The study found that majority (84%) were aware. This would make it easier for MTN to promote its product through the bank.

4.3 Volume of Transaction on MTN Mobile Money Payment System (2012-2014)

An interview with a management member from at MTN Ghana head office revealed the following. Currently, over 5000 clients join the MTN mobile money weekly. Approximately, in the year 2012, MTN served 1 million customers on mobile money, in 2013, they served 2.1 million, and in 2014, they served 3.4 million. This shows a steady rise in usage. In 2012, the volume of transaction was 5 million, in 2013, it was 31 million, and in 2014, it was 89 million. The monetary value of transaction in 2012 was GHC600million, in 2013, it was GHC2 billion, and in 2014, it was 10.5 billion. The above is represented as figure 4.1-3.

The records showed a yearly increment in MTN transaction in all three areas (clients, volume and value). This is an indicator of performance.

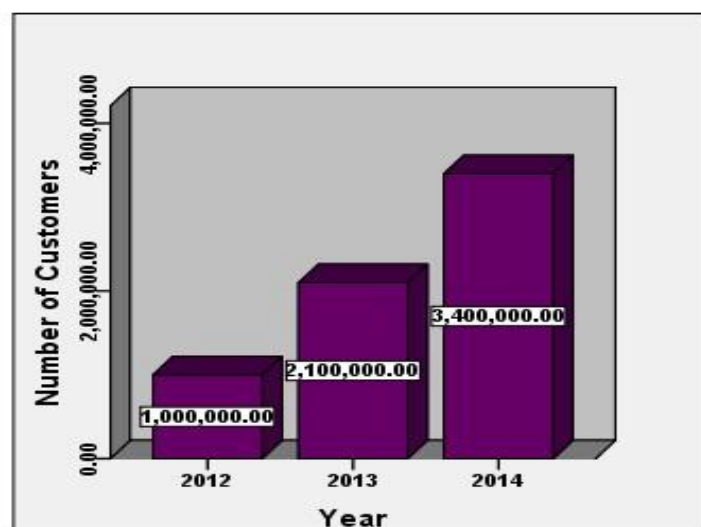


Figure 4.1 Number of Customer (2012-2014)

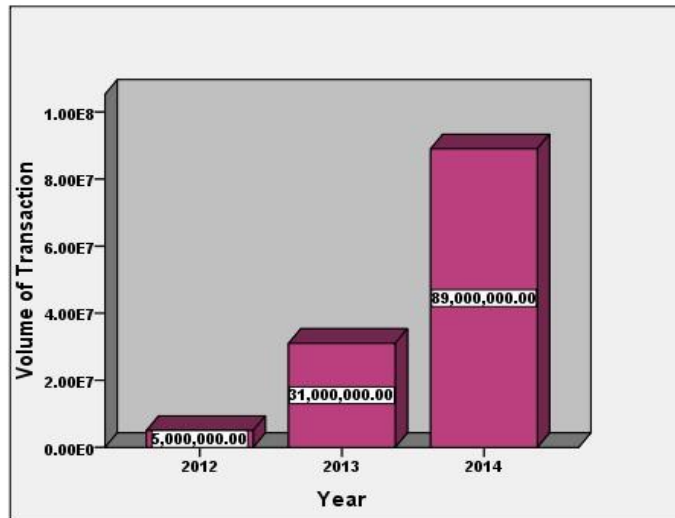


Figure 4.2 Volume of Transactions (2012-2014)

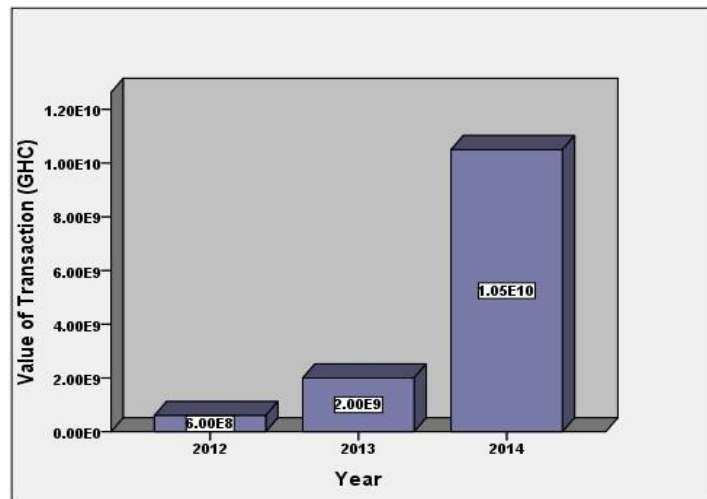


Figure 4.3 Monetary Value of Transactions (2012-2014) 4.4 Level of Customer Satisfaction on Mobile Money System

Customer satisfaction is a paramount and a prerequisite for repurchase decision.

Customer satisfaction refers to the customer's perception that his / her expectations have been met. If the customer's expectations are met, then he is satisfied, if the expectations are surpassed, then he is delighted, but in the event that they are not met,

the customer is dissatisfied (Kotler, 2001). And when it comes to financial service provision, lots of factors contribute to this satisfaction, namely, security, convenience, reliability, ease of operation, and fast service.

In ascertaining the level of customer satisfaction with MTN mobile money and its challenges, a one sample t-test was conducted. For a single sample test, the hypothesis was set as: $H_0: U = \text{or} > U_0$ and $H_a: U < U_0$. With H_0 representing the null hypothesis, H_a representing the alternative hypothesis and U_0 representing the hypothesized mean. The U_0 is the critical rating below which the variable is considered important. The Likert scale was, 1=Strongly agree, 2=Agree, 3=Neutral, 4=Disagree, and 5=Strongly disagree. Under this section, the lower ratings of 1 and 2 were chosen for the rating scale as *strongly agree* and *agree* respectively while the U_0 was set at 2.5, with 95% as the significance level in accordance with the antecedent.

Three things must occur at the same time for an item to be accepted as measuring a particular dimension. 1) It must have a mean score of less than 2.5; 2) it must have a tvalue of equal or greater $+1.65$; and 3) it must be statistically significant at 0.05 (pvalue = or < 0.05). The absence of any would mean the rejection of that variable.

Table 4.3 Satisfaction dimensions

Satisfaction dimensions	<i>Test Value = 2.5</i>			
	Mean	Std. Deviation	t-score	Sig.
Secure	1.6200	.96169	-9.151	.000
Convenient	1.6400	.89352	-9.625	.000
Easy operation	1.6800	1.02376	-8.010	.000
Reliable	1.8000	.97442	-7.184	.000
Fast	1.8100	1.14323	-6.036	.000

Source: Field work, 2015.

Security has become one of the most significant concerns when it comes to general electronic transactions, not to talk of financial transactions. This era of computerization and technology, has also birthed more cybercrimes. People have specialized in hacking financials systems and duping others of their cash. It therefore behooves service providers to put systems in place to secure customers' accounts and transactions. From the study, MTN mobile money is secured (the mean was approximately 2=agree).

Convenience is also another issue of concern when it comes to customer satisfaction. Customers want to enjoy an uninterrupted and available service. The study showed customers rated MTN mobile money as convenient. This is not surprising as there are many MTN mobile money agents in almost every community. This brings the product closer to the customers.

The MTN mobile money services was also reliable, even though the early part of 2015 saw MTN mobile money customers' money being locked up for about a week. They could not withdraw cash nor deposit because there was a technical problem with the system.

The ease at which a technology is been operated, influences customers level of satisfaction. MTN mobile money according to the study was easy to operate. It was easy to open an account, deposit money, or withdraw money. All customers need to do is to just visit any MTN mobile money agent, which is in almost every community to perform any of the actions stated above.

Lastly, the customers agreed the MTN mobile money service was fast. Customers do not need to join the usual long queues at the bank, just to conduct a financial transaction even though some merchants experience long queues during peak hours.

Table 4.4 Level of satisfaction

Variables	Options	Frequencies	Percentages (%)
Level of satisfaction with MTN Mobile Money	Dissatisfied	55	11.0
	Indifferent	65	13.0
	Satisfied	275	55.0
	Very satisfied	105	21.0
	Total	500	100.0
Recommendation	1	10	2.2
	2	20	4.4
	3	30	6.7
	4	50	11.1
	5	70	15.6
	6	50	11.1
	7	35	7.8
	8	25	5.6
	9	40	8.9
	10	120	26.7
	Total	450	100.0

Source: Field work, 2015.

Respondents were asked to indicate generally their level of satisfaction with MTN mobile money. Approximately 11% were dissatisfied, 13% were indifferent, 55% were satisfied, and 21% were satisfied. Generally, 76% of the customers were positive towards MTN mobile money, and that goes to affirm findings presented in table 4.3 above.

Satisfied customers are likely to spread positive word of mouth about a product or company to family and friends. A dissatisfied customer would spread negative word of mouth to about 12 -15 family and friends. Again, respondents were asked to state on a scale of 0 to 10, how likely they were to recommend or preach the good news about MTN mobile money to others, with a 0 = not likely, and 10 = extremely likely. About 75% of the respondents were likely to recommends the services of MTN mobile money to others. By serving customers, MTN generates revenue from

transactions, acquires new customers, and reducing churn / attrition.

4.5 Challenges Facing Customers Using Mobile Money System

As with every system, there are challenges in using MTN mobile money. And this study sought to identify some of the challenges. As stated earlier, three things must occur at the same time for an item to be accepted as challenge to mobile money transaction. 1) It must have a mean score of less than 2.5; 2) it must have a t-value of equal or greater $+1.65$; and 3) it must be statistically significant at 0.05 ($p\text{-value} = \text{or} < 0.05$). The absence of any would mean the rejection of that variable.

Table 4.5 Challenges of using MTN mobile money

Challenges	<i>Test Value = 2.5</i>			
	Mean	Std. Deviation	t-score	Sig.
Network challenges	2.3100	1.25284	-1.717	.033
System challenges	2.3100	1.26087	-1.707	.035
Limits the withdrawer	2.3200	1.39175	-1.293	.199
Not good quality service	2.7900	1.40917	2.058	.042
Not friendly	2.9400	1.37672	3.196	.002

Source: Field work, 2015.

The study showed that, although the first three items presented in the table 4.5 had a mean score indicating they were mobile money challenges, only the first two were statistically significant. Network and system challenges were the outstanding limitations to operating mobile money. Due to the projection of an increase in the number of people to be using their mobile phones to access the net, make payments and do other things, it means hackers, cyber criminals and eave droppers will now shift their attention to mobile phones. According to Doug Gross of CNN smartphones security threats are likely to rise due to Worms, spam, viruses and hackers, aimed at targeting individuals for personal, financial information and this may adversely affect people's

confidence in Mobile Payment System. Other challenges identified from the management perspective were merchants over charging customers; some merchants not adhering to know your customer (KYC) policy; customers call for interest on funds on their wallet; limit on transactions set by the central bank; customer illiteracy; and unstable system or network for operation.

KNUST



CHAPTER FIVE

SUMMARY OF FINDINGS, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This chapter presents the summary of findings of the study and focus on the findings, conclusions drawn from the findings and recommendations.

5.2 Summary of Findings

5.2.1 Percentage of Customers on MTN using the Mobile Money Payment

One does not necessarily need to have an MTN SIM card to operate their mobile money, because one could transfer or receive cash without registering. However, the analysis indicates that 92% of MTN mobile money customers use MTN communication system.

The majority of the mobile money service customers are less than 5 years old with MTN, with savings as the major reason for operating the mobile money account. Other reasons for operating include bill payment, to buy airtime, and for general payment.

The study also found that most clients used the mobile money service once every month. As a way of facilitating customer service with mobile money, MTN has entered into partnership with some banks, of which this was in full knowing of the customers.

5.2.2 Volume of Transaction on MTN Mobile Money Payment System

Approximately, in the year 2012, MTN served 1 million customers on mobile money, in 2013, they served 2.1 million, and in 2015, they served 3.4 million. In 2012, the volume of transaction was 5 million, in 2013, it was 31 million, and in 2014, it was 89

million. The monetary value of transaction in 2012 was GHC600million, in 2013, it was GHC2 billion, and in 2014, it was 10.5 billion.

5.2.3 Level of Customer Satisfaction on Mobile Money System

Generally customers were satisfied with the MTN mobile money services. Customers agreed the service was secured, convenient, easy to operate, reliable and fast. By reason of the satisfaction, they were willing to recommend MTN mobile money services to family and friends.

5.2.4 Challenges Facing Customers Using Mobile Money System

Network and system challenges were the most significant limitation to the operation of MTN mobile money service (from customers' perspective). Other challenges identified from the management perspective were merchants over charging customers; some merchants not adhering to know your customer (KYC) policy; customers call for interest on funds on their wallet; limit on transactions set by the central bank; customer illiteracy; and unstable system or network for operation.

5.3 Conclusions

The study sought to ascertain the role of mobile money in enhancing a cashless system in Ghana. A thorough review of literature was conducted, to have a better appreciation of concepts under study. After the study, it was concluded that, almost all MTN mobile money customers use MTN communication system. The majority of service users are less than 5 years old with MTN; savings was identified as the major reason for operating the mobile money account. Other reasons for operating include bill payment, to buy airtime, and for general payment. Mostly, clients used the mobile money service for once every month. The performance of MTN mobile money grew

from year to year (2012-2014) in all three areas (number of clients, number of transactions, and the monetary value of transactions). Over 5000 customers join the MTN mobile money weekly. Generally, customers were satisfied with the MTN mobile money services. Customers agreed the service was secured, convenient, easy to operate, reliable and fast. By reason of the satisfaction, they were willing to recommend MTN mobile money services to family and friends. Network and system challenges were the most significant limitation to the operation of MTN mobile money service (from customers' perspective). Other challenges identified from the management perspective were merchants over charging customers; some merchants not adhering to know your customer (KYC) policy; customers call for interest on funds on their wallet; limit on transactions set by the central bank; customer illiteracy; and unstable system or network for operation.

5.4 Recommendations and Policy Implications

After undertaking the study, the following recommendations were made;

The study showed an overwhelming percentage of male dominating the customer base of MTN mobile money. The researcher therefore recommends that MTN develops more attractive promotional packages that suits females.

Secondly, although the youth are more technologically savvy, mobile money is not so sophisticated to scare the older generation, and almost everybody above 18 years own a mobile phone in Ghana. But chunk of the customers were the youth, even though they are not the only people who engage in financial transactions. The researcher once again recommends a promotional package that would attract the older generation to patronize the mobile money service.

Thirdly, the study showed that, the users of MTN mobile money are virtually the users of their communication service. This means that customers who do not operate MTN SIM card, do not feel part of their mobile money. But it must not be so because one does not need to be on the MTN communication network to transact mobile money. With or without account, you could still benefit from mobile money, and this must be made known to customers.

Network and system challenges were found to be the most significant challenge that affected customer patronage. Management should therefore pay critical attention to reducing service failures, in order to prevent customer defects.

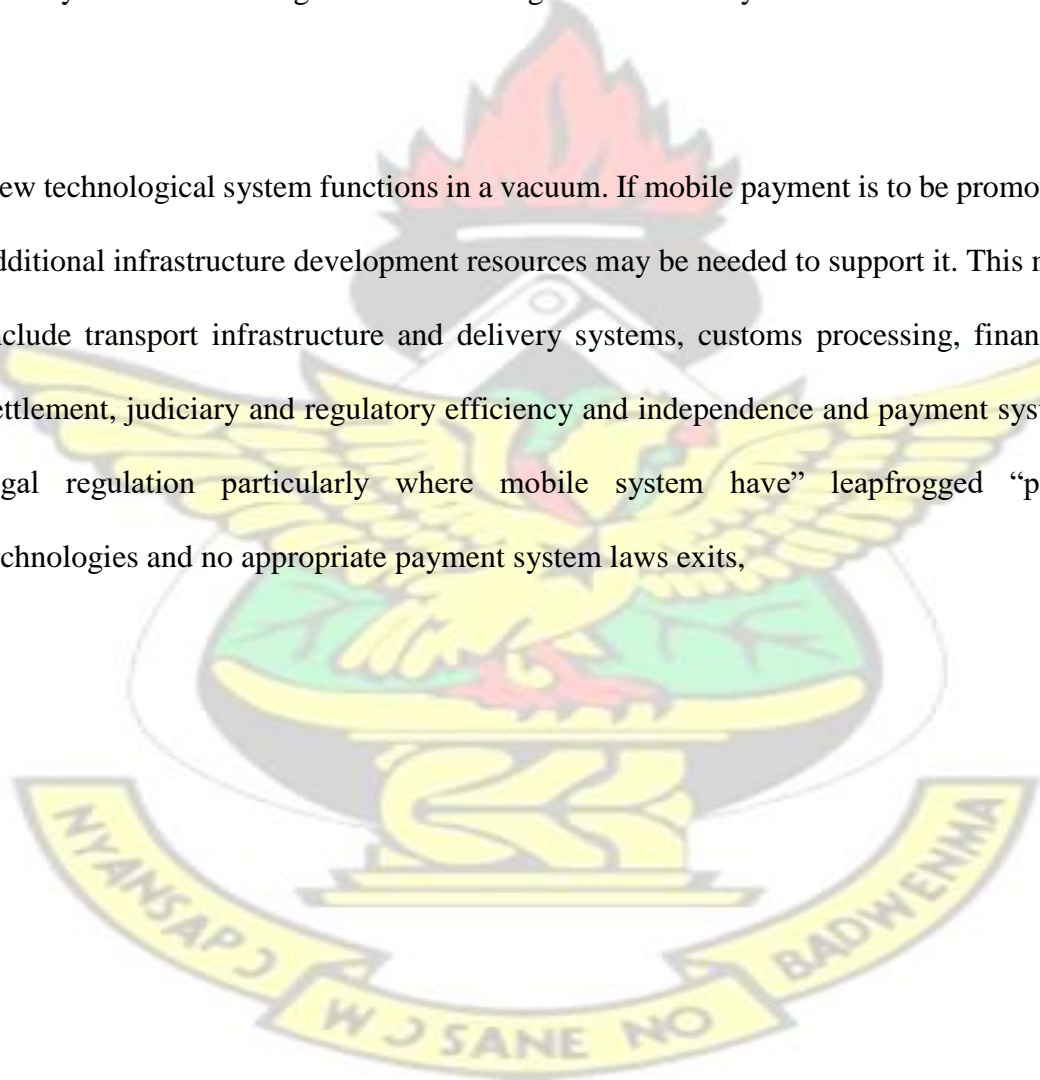
On policy direction, government has already indicated its unflinching support to the National Communication Authority but more can still be done. Government should enact more legislation to punish Telecom Operators whose network services are not up to standard and also implement effectively the BoG legislation of Mobile Payment System to pay interest to depositors since they equally accept deposits and make payments to customers.

Mobile Payment System should also be encouraged since its catchment is wider than the traditional banking which does not have branches nationwide especially the rural parts of Ghana. If fully embraced, it will go a long way to help businesses and people from keeping cash on them when traveling.

More technology should also be adopted by MTN Ghana Ltd and other Telecommunication networks so that, security on transactions are assured and also make mobile money transactions through the use of the mobile phone more simple for its users.

The state should promote competition in mobile money and mobile payment services, since there are tendency toward monopolies in some instances. Issues of cooperation, barriers to entry, intellectual property sharing etc, may come into play. For consumer protection, monetary policy or other reasons, security and system resilience may be encourage or requires the use of “cutting edge”. Technologies. It will be necessary to identify needed technologies and addressing their use locally.

New technological system functions in a vacuum. If mobile payment is to be promoted, additional infrastructure development resources may be needed to support it. This may include transport infrastructure and delivery systems, customs processing, financial settlement, judiciary and regulatory efficiency and independence and payment system legal regulation particularly where mobile system have” leapfrogged “prior technologies and no appropriate payment system laws exists,



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