ASSESSING MTN MOBILE MONEY IN GHANA

By

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A Thesis submitted to the Department of Accounting and Finance, Kwame Nkrumah University of Science and Technology in partial fulfilment of the requirements for the degree of

MASTER OF BUSINESS ADMINISTRATION (FINANCE OPTION)

School of Business, KNUST

College of Humanities and Social Sciences

August, 2015

DECLARATION

I hereby declare that this submission is my own work towards the Master of Business Administration (Finance Option) Degree 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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ABSTRACT

The printing of currency notes and minting of coins takes a heavy toll on every government"s expenditure. Citizens are also exposed to armed robberies as they carry cash from one place to the other. Not forgetting the numerous queues that exist at banks, supermarkets etc when people want to make transactions. Efforts are therefore being strongly made by the Bank of Ghana to promote electronic payments in Ghana and reduce the over reliance on physical cash for transactions. The use of mobile money will help push this agenda. This research aimed at assessing MTN Mobile Money in Ghana as we drive towards a cashless economy.

This was done by critically assessing its current use and investigating the challenges of using MTN Mobile Money. It also established the level of preference for MTN Mobile Money as compared to bank transactions or ATM and e–ZWICH. The study was based on a survey conducted through the administration of questionnaires to users and merchants of MTN Mobile Money in the Ashanti Region. The study showed that single females between the ages of 18 and 25 years use mobile money more often than men. It also identified network instability and unavailability and delay in reversal of wrong transactions as the greatest challenges to the operation of MTN Mobile Money services in Ghana. The findings show that despite these challenges, most users have resolved to continue using the services and also recommend it to other people.
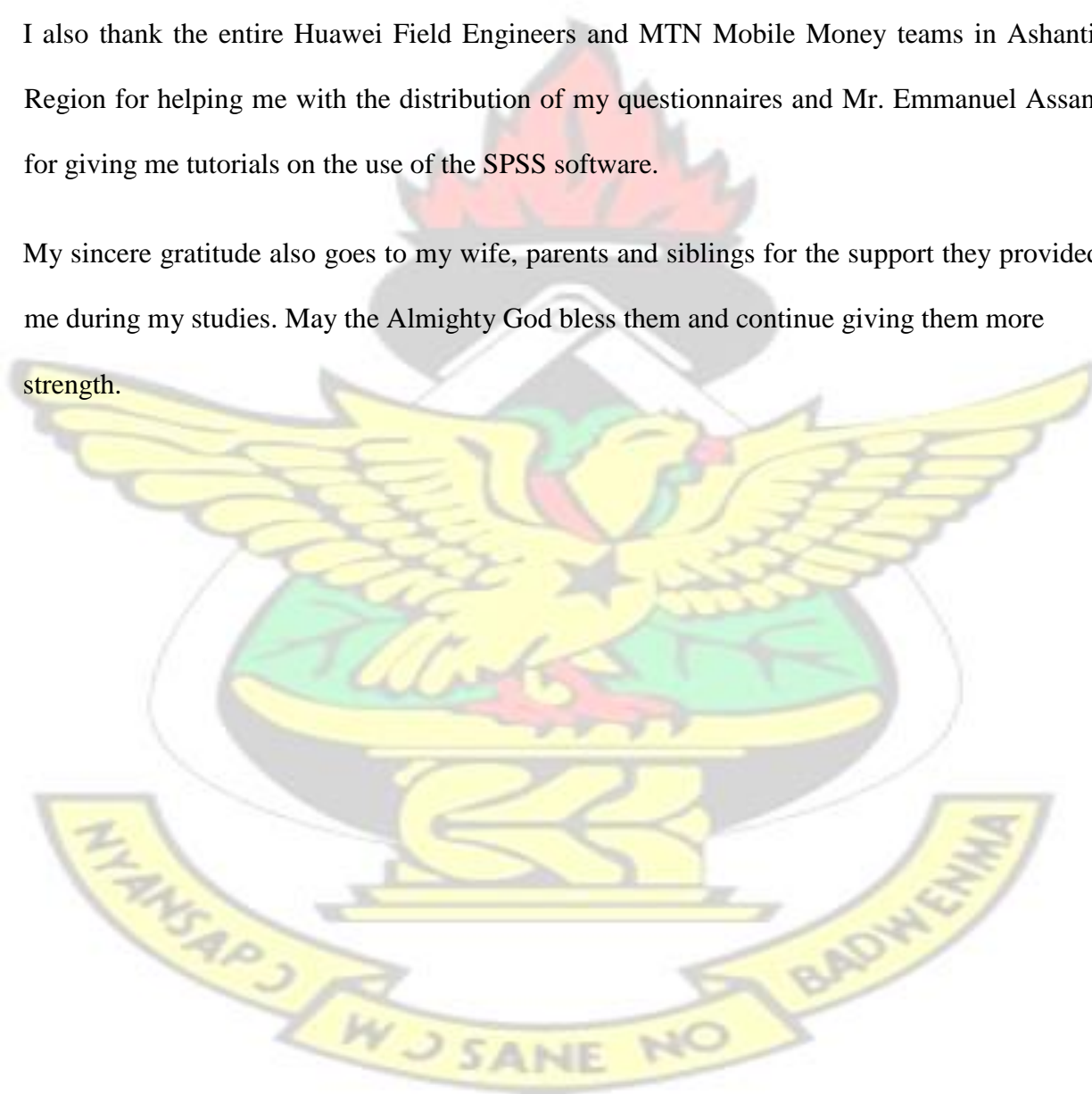
ACKNOWLEDGEMENT

DEDICATION

This thesis is dedicated to my beloved wife, Mrs. Patricia Sogbodjor and our beautiful

daughter, Princess Phebe Amakie Sogbodjor.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF ABBREVIATIONS

ATM	Automated Teller Machine
FIFA	Federation of International Football Associations
GHIPPS	Ghana Interbank Payment and Settlement Systems
JHS	Junior High School
MNO	Mobile Network Operator
MSISDN	Mobile Subscriber International Subscriber Directory Number
MTN	Mobile Telephone Networks
NCA	
PIN	National Communications Authority
POS	
SHS	Personal Identification Number
SIM	Point of Sale
SMS	Senior High School
SPSS	Subscriber Identity Module
	Short Message Service
	Statistical Package for Social Science

KNUST

1.0 Background of the study

Communication has become a very vital tool for existence in modern times. Mobile phones have become part and parcel of life such that many people do not feel comfortable when they lose their mobile phones for a single day. With this great attachment to mobile phones, it will be an interesting phenomenon to have people carry only their mobile phones in their pocket without any wallet or purse; such that all the money that they need can be accessed on their phones. This feature is what is presented by Mobile Money.

"The use of mobile money services is gradually becoming part of people"s day-to-day transactions, and is safe to say that it is making money transfer services quite easier and at cheaper cost. In Ghana for example, one can deposit money into his/her mobile money wallet and transfer this to either mobile money subscribers or non-mobile money subscribers. This reduces the time spent in travelling long distances, queuing at the bank before making a deposit or using unsafe methods such as sending money through bus services for recipients in other towns and villages. Mobile money transfers can be made by pressing few keys on the mobile phone and recipient receives money almost instantly." (Afanu and Mamattah, 2013)

The mobile money industry continues to grow and is now expanding across more regions. With 219 services in 84 countries at the end of 2013, mobile money is now available in most developing and emerging markets. While the majority of services remain in Sub-Saharan Africa, mobile money has significantly expanded outside of the region in 2013. The question

is no longer whether mobile money services are available, but how to ensure that the industry continues to grow sustainably. (Pénicaud and Katakam, 2013)

According to the NCA, Mobile Voice market trends for the country as at the end of February 2015, indicated an increase of 398,649 (1.3%) subscriptions from January's figures to end February 2015 with 31,028,253 subscriptions. MTN's subscription increased by 173,496 from January's figure of 13,939,936 to end February 2015 with a figure of 14,113,432. Mobile phone penetration as at February 2015 stood at 115.40%. (NCA, 2015)

This statistics indicate that the use of mobile phones in Ghana is very high with an estimation that averagely every single individual owns a mobile handset. This makes mobile money a tool that can be exploited, given the high mobile phone penetration in Ghana.

In Ghana, Scancom Limited, operators of MTN have the highest market share of subscribers (14,113,432) which constitute 45.49% of the market.
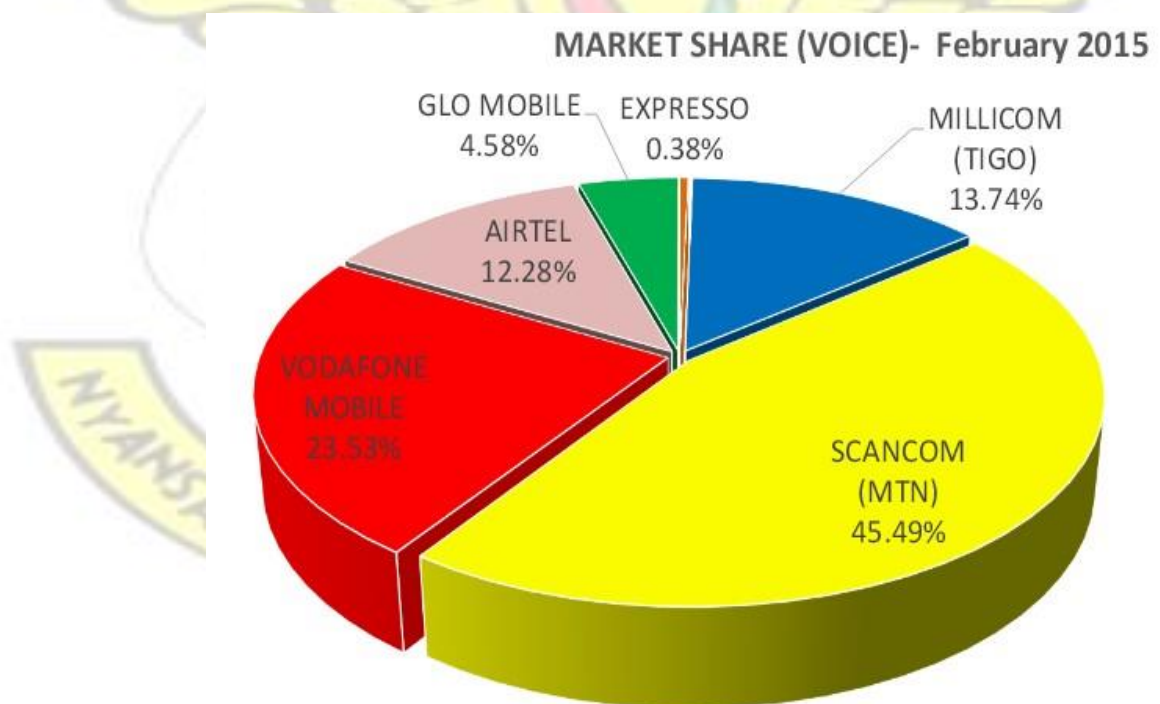
Figure 1.1 **Mobile Voice Market Share for February 2015**

(Source: NCA, 2015)

1.1 Problem Statement

Various transactions take place with money as the focal point in the form of cash. People spend hours in queues at most banks to be able to withdraw cash for transactions or deposit cash after transactions. This hampers productivity as productive working hours are spent in banks for these cash transactions. Queues are not only experienced in banks. People also queue when they want to pay water and electricity bills, make payments in stores etc. This makes such transactions cumbersome and a very tiring process for people; not forgetting the time delays that come with it. Armed robbers are also on the loose, waiting to pounce on innocent people to rid them of their cash. With the increasing spate of highway robberies, traders are also at a high risk since they carry large sums of money on them as they travel to purchase their goods. The government is also burdened with the task of printing new Ghana cedi notes and minting coins to be circulated into the economy as and when it becomes necessary. It has therefore become necessary to encourage more non–cash transactions in the society to make life quite easy so that people will not be moving about with much money on them; and government will also be able to make some savings since there will be a reduction in printing of new Ghana cedi notes and minting coins. Therefore, the problem the researcher intends to investigate into is to identify the role of MTN Mobile Money in Ghana as we drive towards a cashless economy.

1.2 Objectives of the study

1.2.1 General objective

"To assess the role of MTN Mobile Money in creating a cashless economy in Ghana"

1.2.2 Specific objectives

1. To critically assess the current use of MTN Mobile Money services in Ghana.

3

2. To investigate the challenges affecting the use of MTN Mobile Money in Ghana.

3. To examine the level of preference for MTN Mobile Money as compared to bank transactions or other cashless transactions (ATM and e–ZWICH).

1.3 Research questions

This research seeks answers to the following:

1. What is the current state of use of MTN Mobile Money services in Ghana?

2. What challenges affect the use of MTN Mobile Money in Ghana?

3. What is the level of preference for MTN Mobile Money as compared to bank transactions or ATM and e–ZWICH?

1.4 Significance of the study

The use of electronic payments has become a global trend due to the savings it offers to individuals, companies and governments. With e-payments, the physical transfer of cash from one place to the other is largely reduced. The printing of paper currency and minting of coins comes at a cost to governments hence e-payment systems would offer them huge savings.

There are various forms of cashless transactions in Ghana including cheques, credit/debit cards, fuel cards, e–ZWICH and mobile money. Debit cards are the widely used of these forms, especially on ATMs. It is interesting to note that, most of these supposed cashless transactions usually end up with individuals obtaining cash after the transaction. People cash their cheques whiles others withdraw cash from ATMs and their e–ZWICH cards.

Therefore, the fight for a cashless economy is largely not achieved since except for fuel cards that can be used to purchase fuel directly, all the other forms can end up with using cash in the economy to purchase goods and services. The use of e–ZWICH cards had much prospects, but not much has been achieved with it since every sales outlet would require a

Point of Sale (POS) device.

This research aimed at assessing MTN Mobile Money in Ghana as we drive towards a cashless economy. The choice of MTN is because MTN has the largest market share in Ghana (45.49%). The hypothesis is that a move towards a cashless economy using mobile money will be high if this 45.49% of mobile phone users perform transactions using mobile money. All they require is their regular mobile phone and their MTN SIM card.

The study is important because it will throw more light on how reliable MTN Mobile Money is for performing cashless transactions and to know the challenges that affect its use in the economy. It will also establish the level of preference for MTN Mobile Money as compared to bank transactions or other cashless transactions (ATM and e–ZWICH). This will be beneficial to all enterprises willing to undertake cashless transactions for their products and services, since the findings may provide useful opportunity that can be exploited.

1.5 Brief methodology

Primary data was used for this research. Questionnaires were developed targeted at users of MTN Mobile Money to seek their views about the mobile money services and the challenges they encounter when using them. Another set of questionnaires were developed targeted at mobile money merchants to seek information concerning the reliability of their transactions.

1.6 Scope of the study

Money is used by almost every individual in the society; from children to adults, the rich to the poor, the literate to the illiterate and so on. This gives the study a very wide scope.

However, the main focus was on users of MTN Mobile Money since they are the best source of information regarding the challenges they face with the mobile money platform.

Transactions done through mobile money cuts across regions, cities and towns. In view of this, the geographical coverage was to target users and merchants in the Ashanti Region for the primary data.

1.7 Limitations of the study

One limitation that the researcher encountered was challenges in obtaining secondary data from MTN. To further strengthen the findings on the assessment of MTN Mobile Money in Ghana, the researcher required data from MTN indicating the various transaction types and the amounts spent on each transaction. The system could not generate a single report about the merchants but it must be done individually and all the amounts collated. A sample of 265 merchants was used but due to time constraints, the MTN Officer in charge could not do this.

1.8 Organization of the study

The research has been organized into five chapters:

Chapter One focuses on the background, objectives and significance of the study. It also highlights the major problems that the study seeks to address. Chapter Two reviews various literature and other studies that have already been done in the subject area. Chapter Three assesses the methodologies employed to obtain the required data and a profile of the case study organization. Chapter Four presents the results from the data analysis and interpretation of findings. Chapter Five looks at summary of the findings, conclusion and recommendations that can be made from the findings that were obtained. It also highlights possible areas that can be used for future research.

CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction

This chapter looks at some of the previous studies that have been done in this subject area. It will also identify the gap that this research hopes to fill.

2.1 Cashless Economy in Ghana

Omotunde et al. (2013) defined a cashless economy as one where transactions can be done without necessarily using physical cash as a means of exchange of transaction but rather with the use of credit or debit card payment for goods and services. They argued that it is not the complete absence of cash but an economic setting where goods and services are purchased through electronic means. Okoye and Ezejiofor (2013) also agreed that a cashless economy does not imply the complete absence of cash transactions but rather, a setting in which there is a reduction in cash–based transactions.

A cashless economy can therefore be defined as an economy that offers the opportunity for people to perform most of their transactions through electronic media thereby reducing the use of actual cash.

Thus, one requirement of a cashless economy is the use of electronic payments (e-payments) for goods and services. Over the years, the Bank of Ghana has been pushing for a cashless economy in Ghana which led to the introduction of the e–ZWICH card through their collaboration with GHIPPS.

Appiah et al. (2014) undertook a study on customer˝s perception and usage of e–payments in Ghana. They identified five types of e–payment systems in Ghana: Debit Cards, Credit Cards, Charge Cards, Stored Value Cards, ATMs and Mobile Payment Systems.

In terms of awareness, they established that 92% of their respondents were aware of ATM cards, 88% were aware of mobile banking, 84% were aware of e–ZWICH, 88% were aware of credit cards and 52% were aware of debit cards. They established that most of their respondents were aware of the e–payment methods, but the awareness was skewed towards ATMs. In terms of willingness to use e–payment systems, most of the respondents agreed that e–payments were convenient in making transactions since it allowed customers, in the convenience of their homes and offices, to access and make transactions on their accounts without any difficulty. In terms of ease of use, the respondents agreed that e–payments are easy to be used and user friendly. In terms of affordability, they agreed that the charges were affordable.

They concluded their research by confirming that e–payments are effective in making transactions and it is also accurate, time saving, and convenient than cash system. Those who know of the e–payment methods, use them efficiently for their business transactions.

Issahaku (2012) conducted a study on the challenges of e–payment systems in Ghana using the case of e–ZWICH. He however established that e–ZWICH users prefer ATM to e–ZWICH. He identified a number of challenges that are militating against the success of the e–ZWICH service. Among these are link failure, frequent breakdown of the POS device, slow process of service delivery and long queues. Another is the inaccessibility of the POS device before and after banking hours as well as during weekends, thereby preventing the e–ZWICH customer from making utmost use of the e–ZWICH card.

These studies have confirmed that there is much prospects with pursuing a cashless economy in Ghana. However the ideal type of e–payment system to use to achieve this objective has become a challenge. The use of ATM cards have been confirmed as the most preferred option but unfortunately it is a debit card that can be used to withdraw cash from peoples accounts. As a card, it cannot be used to purchase goods and services but cash must be withdrawn to perform these functions.

Agarwal et al. (2011) reiterated that even though the ATMs provide 24x7 cash services, they deal with paper currency. There is also a high cost in maintaining the machines and consistently refilling with cash. He asserted that due to the easy availability of mobile phones, the use of mobile payments will soon dominate the world of electronic payments.

This research therefore hopes to bring to the fore the challenges that affect the use of mobile money payments to eliminate the over dependence of cash in the economy.

2.2 Mobile Money

2.2.1 Mobile Money in Africa

Jenkins (2008) defined Mobile Money as money that can be accessed and used via mobile phone which can be used to perform transactions such as remittances, bill payment, payroll deposit, loan receipt and repayment, and purchases of goods and services such as prepaid airtime, groceries and bus tickets.

Aker and Mbiti (2010) also defined Mobile Money as a product that allows clients to use text messages to store value in an account that is accessible by the handset, with the ability to convert cash in and out of the account, and transfer money between users.

Afanu and Mamattah (2013) further added that Mobile Money allows subscribers to bank directly from their mobile phones without physically being in a financial institution.

9

Transactions such as payment of bills and receiving money can be done through a virtual account (known as mobile wallet) on the mobile phone.

Mobile Money is therefore money that is virtually stored in the accounts of a mobile subscriber of a telecommunication company that enables the subscriber to purchase goods and services without the use of physical cash.

Most literature cite Mobile Money as a growing trend in Africa. The most talked about brand of mobile money in Africa in most literature is that of the M-PESA which is operated by Safaricom and used in Kenya and Tanzania.

The M-PESA was launched in March 2007 and in 2009, it recorded more than 6 million registered users. (Mbiti and Weil, (2011)). Jack and Suri (2011), describe it as an innovation that clearly dominates its money–transfer predecessors on virtually all dimensions. Their respondents agreed that Mobile Money is faster, cheaper, more reliable, and safer and most of them said they would be affected negatively should the service be shut down.

Apart from M-PESA, there are other mobile money services being offered in Africa by MTN, Airtel and TiGO. MTN offers the MTN Mobile Money, Airtel, the Airtel Money and TiGO, the TiGO Cash.

Statistics provided by Williams (2013) indicated that, in 2012 the MNOs providing Mobile Money recorded the following daily transaction figures: TiGO recorded GH¢11 million (US$5.5 million), Airtel recorded GH¢4 million (US$2.02 million) and MTN recorded GH¢1.5 million (US$759,690.77). In the same year MTN had 3 million mobile money subscribers, Airtel had 900,000 mobile money subscribers and TiGO had 3.75 million mobile money subscribers.

2.2.2 Adoption of Mobile Money in Ghana

Tobbin and Kuwornu (2011) developed a model that tried to predict the factors that affect consumer behaviour towards the adoption of mobile money transfer in Ghana. They also identified the key determinants of user acceptance of mobile money transfer.

Their analysis established that the intention to use mobile money transfer was found to be below average. Out of a total of 288 respondents, 48.4% responded yes to having an intention to use mobile money, 28.3% said no and 23.3% were unsure.

Regarding knowledge of any mobile money transfer in Ghana, 85% of the respondents said yes with 93% of them having heard of the MTN Mobile Money Transfer through advertisements. However, only 10% claimed to have used the service. Knowledge of the service was not reflective of its usage. As at the time of their study, MTN"s Mobile Money and Airtel"s ZAP (now Airtel Money) were the only two mobile money transfer services available in Ghana.

They concluded that the adoption of mobile money transfer is dependent on consumers" perception on trust and risk. This supports the traditional view that risk and trust have an effect on the usage of financial services.

2.3 MTN Mobile Money in Ghana

2.3.1 Challenges hampering the use of MTN Mobile Money

There was not much literature found relating to this subject area. Information gathered revealed the general challenges that affect the use of mobile money in Ghana but not specifically MTN Mobile Money.

Trust, Risk and Transactional cost

As reviewed earlier, Tobbin and Kuwornu (2011) identified the issue of trust on the part of consumers to be a challenge in the adoption of mobile money in Ghana and the consumers they interviewed confirmed that transactional cost can influence their intention to use the mobile money transfer services.

Network Availability and Interoperability

Amankwa and Kevor (2013) came out with the findings that the mobile money payment system can be used as a way to overcome the problem of efficient payment systems in the e-commerce model. After a careful analysis of existing e–business models, they proposed a new model which ensures integration between MNOs and SMEs as a way to overcome the perceived barriers.

Their model was based on the assumption that the existing mobile money payment systems will have a minimal down time, since the proposed model is dependent on the availability of the mobile money payment systems. It is also limited by the lack of inter-operability between the mobile money payment service providers. This prevents customers from one mobile money payment service provider from doing business with others. For instance, a customer who holds an MTN Mobile Money account can only buy goods and services from vendors with MTN Mobile Money account, but not from those with Airtel Money or Tigo Cash.

Security threats

Afanu and Mamattah (2013) established that it is cumbersome for one to open a bank account due to the materials required, however it is very easy to own a mobile money account. They identified PIN sharing as one of the security threat to the use of mobile money. To address this they suggested that the MNOs should give mobile money security tips to the users at least twice in a year through SMS, to alert them of ways to enhance the security of their mobile phones.

2.3.2 Additions to the Mobile Money platform

According to Agarwal et al. (2011), mobile payment systems are of two types - Remote Payments Systems and Proximity Payment Systems. In remote payment, the payer and the payee are at remote locations, e.g. a customer places an order from his home to a retail store. With proximity payment, the payer and payee are in the same location, e.g. a customer (payer) buys a cup of coffee from a vending machine (payee). He outlined some simple steps that show that mobile payments can be used to purchase items from stores by order (remote) or in person (proximity). This is a feature that if explored further can eliminate a lot of cash transactions in Ghana since payments of goods and services can easily be done with MTN Mobile Money when the right measures are put in place.

Mensah et al. (2012) developed a proposed framework for the improvement of mobile money payment systems in Ghana. They expect that other services such as paying bills, taxes, school fees, purchasing items, contracting loans, checking account balances, depositing money and insuring property should be added to the mobile money services.
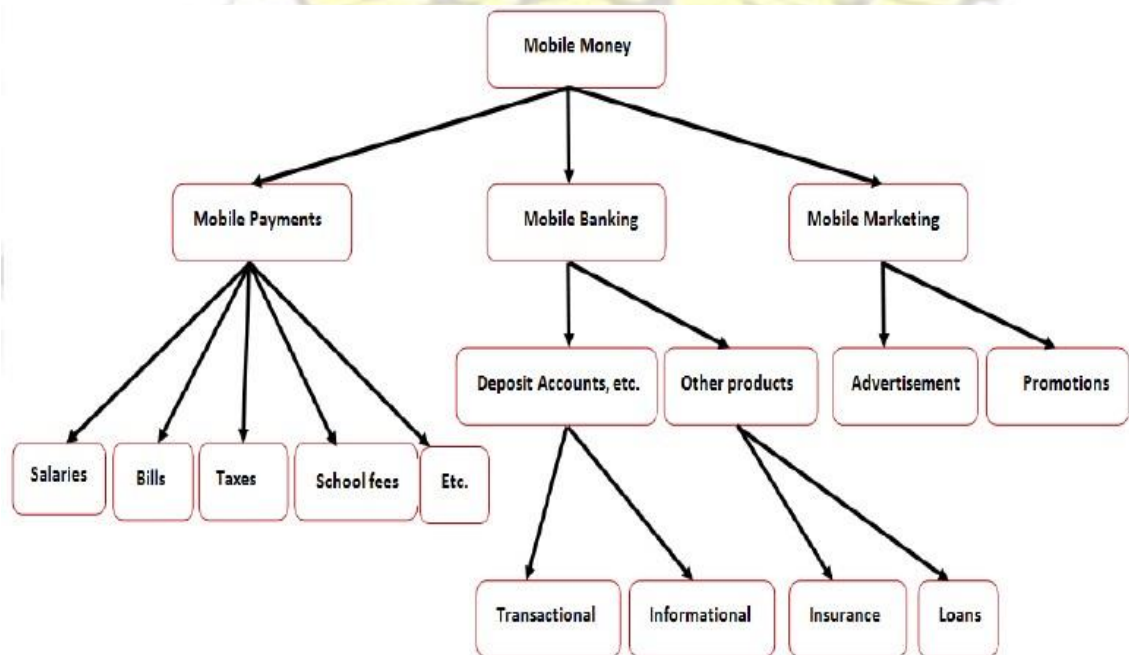
Figure 2.1 **Expected Mobile Money Services To Be Covered**

(Source: Mensah et al., 2012, op. cit., p.37)

Most of these studies have concluded that mobile money will assist in eliminating most of the cash based transactions in the economy. However what has not been identified are the challenges affecting the use of MTN Mobile Money in our bid to create a cashless economy in Ghana. A thorough assessment of the current uses of MTN Mobile Money services has also not been done. This study seeks to explore these areas.

CHAPTER THREE

METHODOLOGY AND CASE STUDY PROFILE

3.0 Introduction

This chapter discusses the methodology used for this study. It highlights the research design, the sources of data, the population and sampling method used, as well as data collection instrument and data analysis technique used. It also gives a profile of the case study organization.

3.1 Research Design

The research was to assess the current use of MTN Mobile Money, ascertain and describe the challenges that affect its use to eliminate most cash transactions from the economy; and establish the level of preference for MTN Mobile Money as compared to bank transactions or ATM and e–ZWICH. Thus, the descriptive research design was employed in this study.

3.2 Sources of data

Primary data was collected from users and merchants of MTN Mobile Money through questionnaires. The questionnaires were administered to prospective respondents found at various merchant points in areas around Kumasi, Obuasi, Bekwai, Offinso, Mampong, Ejisu and Konongo, all in the Ashanti Region.

3.3 Population

The population of interest for this study was merchants and users of MTN Mobile Money. Information gathered from MTN revealed that there are two thousand, six hundred and forty–five (2,645) merchants in Ashanti Region as at end of May 2015. This is made up of individuals, shop owners and financial institutions. Unlike the merchants who are at a fixed point, the users can move within regions thus it becomes very difficult to know the exact number in a particular region. It was however estimated that subscribers of MTN in the region span beyond three million (3,000,000).

3.4 Sample size and sampling technique

Since it is impossible to survey the entire population of both merchants and users of the mobile money services considering the huge numbers, a sample of the population was used.

A sample of two hundred and sixty–five (265) was used as the study‟s sample size for merchants and the same number for users. This constituted 10% of the total number of merchants. Hence, it was assumed that each merchant would serve one user/customer. The

sampling technique used was the simple random method. The merchants' locations were randomly selected across the region and each user/customer was also randomly selected at the merchant's point.

3.5 Data collection instruments

Two (2) sets of questionnaires were designed and distributed to obtain primary data for the research. One was designed to solicit information from users/customers of MTN Mobile Money while the other was designed for the merchants.

The questions were based on the objectives of the study. The responses ranged from dimensions of "Yes" or "No", likert scale responses and open ended questions.

The questionnaires were administered in person through the help of family and friends. Merchants in selected cities in Ashanti Region were randomly selected and given a merchant's questionnaire to answer. A customer of the merchant was also randomly selected and given a user's questionnaire to answer.

3.6 Data analysis technique

The data collected was analyzed using the SPSS software and Microsoft Excel.

In using the SPSS, questions with options to be selected (Yes or No, likert scale etc) were coded and the responses were manually entered into the software. The data was then manipulated using the software to obtain tables which required further interpretation. Responses from the open ended questions were entered into Excel sheets in order to make sorting and other analysis easy. Values from the tables generated by the SPSS were also tested in Excel using formulas.

3.7 Validity and reliability

According to Saunders et al (2009), research validity means the accuracy and truth of the data of the research as well as the findings that are produced; and research reliability is the consistency and dependability of a measuring instrument, that is, the extent to which similar responses are given over time and among comparable groups regardless of who dispenses it.

To ensure that the responses were valid and reliable, the researcher made initial contact with key personnel involved in the administration of the MTN Mobile Money service. This informed the researcher on the nature of questions to develop in order to get the desired outcomes. Again, the questionnaires were fully examined by the researcher, the supervisor and friends in terms of its content in relation to the research objectives.

As a test of reliability, the questionnaires were evenly distributed to the various locations. Each location had a minimum of 30 questionnaires in order to ensure that the responses were consistent from a particular area and a particular set of respondents.

3.8 Case Study Profile

3.8.1 Profile of MTN

The MTN Group was launched in 1994 with its head office in Johannesburg, South Africa. The Group provides quality telecommunication services in their countries of operation. It has operations in twenty–two countries across Africa, Asia and the Middle East with over 203.8 million subscribers and 25,424 employees. The countries are:

☐ Afghanistan	☐ Benin	☐ Botswana	☐ Cameroon
☐ Congo Brazzaville	☐ Cyprus	☐ Ghana	☐ Guinea Bissau
☐ Guinea Republic	☐ Iran	☐ Ivory Coast	☐ Liberia
☐ Nigeria	☐ Rwanda	☐ South Africa	☐ Sudan

☐ South Sudan   ☐ Swaziland   ☐ Syria   ☐ Uganda

☐ Yemen   ☐ Zambia

MTN‟s vision is "To lead the delivery of a bold new digital world to our customers" and its mission is "To make our customer‟s lives a whole lot brighter". As part of its organizational culture, the Group operates on 5 "Core Brand Values" which are adhered to by employees in all operating countries:

1. <u>Leadership</u> – having foresight, commitment, guidance and leading the way through connectivity enablement.

2. <u>Integrity</u> – having solid principles, trust and togetherness.

3. <u>Can–Do</u> – being optimistic, future focus, passionate and creating possibilities.

4. <u>Innovation</u> – imagination, insight, creativity and doing things differently.

5. <u>Relationships</u> – teamwork, friendly and making unlikely connections.

One of the success stories of MTN is the successful partnership with FIFA in hosting the first ever World Cup on African soil in 2010 in South Africa.

MTN Ghana joined the MTN Group in November 1996 after the acquisition of Investcom. It is the market leader in the competitive Ghanaian telecom industry with over 14 million subscribers while offering exciting range of products and services for both prepaid and postpaid subscriptions. MTN has an extensive network coverage that covers all 10 regional capitals as well as major cities, rural and remote areas. There are 3 state of the art switching centres located at Sakaman, Tetteh Quarshie (all in Accra) and Kaase (in Kumasi). Two other switching centres are located in Cape Coast and Tamale. Together, these centres help to provide excellent telecommunication services across Ghana. (MTN Group, 2015)

3.8.2 Profile of MTN Mobile Money

MTN Mobile Money is a product that was developed by the MTN Group and currently being operated in 14 countries. MTN Ghana launched Mobile Money in July, 2009 in partnership with 9 banks. Currently there are 10 partner banks: Ecobank, Fidelity Bank, Guaranty Trust Bank, CAL Bank, Stanbic Bank, Zenith Bank, United Bank for Africa, Universal Merchant Bank, Access Bank, and Agricultural Development Bank.

MTN Mobile Money provides a fast, simple, convenient, secure and affordable way of transferring money, making payments (electricity bill, DSTv fees etc) and topping up MTN airtime using a mobile phone.

There are two categories of people when it comes to mobile money: the user/subscriber and the merchant. The user/subscriber is the wallet holder and can use the service without opening or having a bank account. All one needs is to be an MTN subscriber (or obtain an

MTN SIM if not a subscriber) and register with a valid national photo ID for a wallet to be created. The user would need a 4–digit PIN to be able to access the mobile money menu on his/her phone. This code is to be kept secret by the user. The user can be able to directly load the wallet (i.e. make deposits into the wallet) or cash out from the wallet (i.e. make withdrawals from the wallet).

However, there is a provision for non–MTN subscribers who want to transfer money using MTN Mobile Money. Such users do not have access to the mobile money menu but can only send or receive money through the "token" service. The sender pays the money to the merchant who generates a code, known as token, and gives to the sender. The sender then gives the code to the receiver who goes to any merchant and does a withdrawal using the token.

The merchant is any registered business entity that provides mobile money products and services on behalf of the partner banks. The MSISDN of the merchant is linked to a particular

partner bank where a virtual account is created by the bank. This is done because MTN is not a financial institution and therefore cannot transact financial services. The use of the partner banks helps to facilitate the financial services. To become a merchant, one needs to have a registered business with a Tax Identification Number to show proof of filling tax payments.

A form indicating the partner bank of the „merchant–to–be" is obtained from the MTN office and after filling the form, an officer is sent to the premises of the merchant for inspection and clearance. After satisfying the requirements, an MSISDN linked to the partner bank is issued to the merchant to start business. (MTN, 2015)

CHAPTER FOUR

DATA PRESENTATION, ANALYSIS AND DISCUSSION OF FINDINGS

4.0 Introduction

This chapter covers data presentation, analysis and discussion of findings on the research objectives of assessing the current use of MTN Mobile Money, determining challenges affecting its use and examining the level of preference for MTN Mobile Money as compared to bank transactions or other cashless transactions (ATM and e–ZWICH).

The data presented and analyzed was based on the questionnaires that were answered by the respondents (users and merchants of mobile money). Analysis was done using the SPSS software and Microsoft Excel.

4.1 Response rate

The study sampled a total of 265 users and same number of merchants of MTN Mobile Money service. These respondents were randomly selected across the Ashanti Region. Out of the total number of questionnaires administered, 242 responses were received from the users and 234 from the merchants, representing a response rate of 91.32% for the users and 88.30% for the merchants.

4.2 Demographic characteristics of respondents

The study examined the demographic characteristics of the users of MTN Mobile Money but not the merchants since the researcher considered user demographics as more relevant to the research than that of merchants. The demographic characteristics discussed include gender, age, marital status and educational level of users. This gives an overview of the characteristics of the sampled respondents.

Table 4.1 *Sex of Users*

		Frequency	Percentage	Valid Percentage
	Male	139	57.4	57.4
Valid	Female	103	42.6	42.6
	Total	242	100.0	100.0

Source: Field Data (2015)

The results in Table 4.1 shows that 57.4% of the total user respondents were males while 42.6% were females. Thus, the gender of respondents was fairly distributed since male respondents were a little bit more than females. This implies that the study had a good representation of respondents from both the male and female sexes and is not skewed towards one particular gender.

Table 4.2 *Marital Status of Users*

		Frequency	Percentage	Valid Percentage
Valid	Single	159	65.7	67.1
	Married	69	28.5	29.1
	Divorced	9	3.7	3.8
	Total	237	97.9	100.0
Missing	System	5	2.1	
Total		242	100.0	

Source: Field Data (2015)

An examination of the marital status of the respondents as indicated in Table 4.2 revealed that more than half of the respondents (67.1%) were single while 29.1% were married and just 3.8% have divorced. Thus it could be inferred that most of the mobile money users are young people. This confirms the general notion that the youth are more adaptive to the use of technological devices as compared to older people.

Table 4.3 *Age of Users*

		Frequency	Percentage	Valid Percentage
Valid	Below 18 years	18	7.4	7.4
	18 to 25 years	109	45.0	45.0
	26 to 30 years	47	19.4	19.4

31 to 40 years	48	19.8	19.8
Above 40 years	20	8.3	8.3
Total	242	100.0	100.0

Source: Field Data (2015)

The age of the respondents as displayed above shows that 7.4% of the users were below the age of 18 years whereas 45.0% were within 18 to 25 years. It was further found that users within the ages of 26 to 30 years formed 19.4% while users between 31 to 40 years formed 19.8%. Finally, just 8.3% were above 40 years of age.

Therefore, 71.9% of the users of MTN Mobile Money were found to be either 30 years old or younger, out of which 62.6% fall within the ages of 18 to 25 years. This further confirms the earlier assertion that the youth are the most users of MTN Mobile Money and goes on to establish the fact that singles within the ages of 18 to 25 years use the mobile money services most.

Table 4.4 *Level of education of users*

		Frequency	Percentage	Valid Percentage
Valid	Basic	5	2.1	2.1
	JHS	42	17.4	17.4
	SHS	85	35.1	35.3
	Tertiary	97	40.1	40.2

23

	Frequency	Percentage	Valid Percentage	
None	12	5.0	5.0	
Total	241	99.6		
System			100.0	
Missing	1	0.4		
Total	242	100.0		

Source: Field Data (2015)

The level of education of users of MTN Mobile Money is displayed in the table above. It could be seen that just 2.1% of the users have only basic education while 17.4% have been educated up to the JHS level. The number of users with education up to SHS was 35.3% whereas 40.2% have tertiary level education. It is only 5% of users that do not have any level of formal education. Therefore, it could be inferred that majority of the users are literates with the number of tertiary level users making up the greatest percentage of users. Thus, it is safe to conclude that educated people are more likely to embrace mobile technology services like the MTN Mobile Money than uneducated ones.

4.3 Assessment of MTN Mobile Money

4.3.1 General Information about level of use for both users and merchants

The researcher sought information from both users and merchants regarding the MNOs that they use and if they have actually registered for the mobile money service and thus own an MTN Mobile Money wallet. They were also to indicate the number of years in using MTN Mobile Money and whether they share their PIN with others.

Table 4.5 *Mobile network users' use*

	Frequency	Percentage	Valid Percentage
	231	95.5	95.5

Valid				
Valid	MTN	52	21.5	21.5
	Vodafone	36	14.9	14.9
	Airtel	27	11.2	11.2
	TiGO	5	2.1	2.1
	GLO	0	0	0
	Expresso			

Source: Field Data (2015)

Table 4.5 displays the mobile network of the users. Each user was asked to select the MNOs that they use which could be either one or more. The results show that 21.5% of respondents use Vodafone while 14.9% use the Airtel network. The users of TiGO constituted 11.2%, with GLO having only 2.1% of the respondents and none of the respondents use the Expresso network.

Users of MTN constituted 95.5% of the respondents which gives an indication that only 4.5% of the users do not use the MTN network but still conduct mobile money transactions using the MTN network. This means that a user of MTN Mobile Money does not necessarily need to have an MTN Mobile Money wallet before they can enjoy the mobile money services.

Table 4.6 *Ownership of MTN Mobile Money wallet*

		Frequency	Percentage	Valid Percentage
Valid	Yes	219	90.5	91.3
	No	21	8.7	8.7
	Total	240	99.2	100.0

		Frequency	Percentage	Valid Percentage
Missing	System	2	0.8	
Total		242	100.0	

Source: Field Data (2015)

It could be seen from Table 4.6 that 91.3% of the users have a mobile wallet while 8.7% do not have it. It implies that majority of the users have their own MTN Mobile Money wallet with which they conduct mobile money transactions. Comparing this with the number of users who use the MTN network from Table 4.5 which was 95.5%, it means that while 95.5% of the users use the MTN network, 94.8% of them have a mobile money wallet. Thus, only 5.2% of users of MTN network do not have a mobile money wallet.

Table 4.7.1 *Years of using MTN Mobile Money*

		Frequency	Percentage	Valid Percentage
Valid	Less than 1 year	61	25.2	26.0
	1 to 2 years	87	36.0	37.0
	3 to 4 years	46	19.0	19.6
	5 to 6 years	41	16.9	17.4
	Total	235	97.1	100.0
Missing	System	7	2.9	
Total		242	100.0	

Source: Field Data (2015)

The researcher wanted to find out how long the users have been using the MTN Mobile Money service since it was introduced six (6) years ago. Table 4.7.1 indicates that 26.0% of users have been using the service for less than a year while 37.0% have been using it for 1 to 2 years now. Finally, 19.6% have been using it for 3 to 4 years whereas 17.4% have been using it for 5 to 6 years.

It could be found that the number of users of mobile money services has increased greatly within the last four years as this accounted for 82.6% of the users. This is a sign that the interest of the population in the mobile money service is continuously rising. Thus usage of mobile money in Ghana has seen a drastic increase as compared to the findings of Tobbin and Kuwornu (2011) four years ago. They established that out of 93% of respondents who have heard of the MTN Mobile Money Transfer, only 10% claimed to have used the service. This research has however shown that, within the past four years, the 10 % of users has risen to 82.6% which is a remarkable increase.

Table 4.7.2 *Years of being an MTN Mobile Money Merchant*

		Frequency	Percentage	Valid Percentage
Valid	Less than 1 year	79	33.8	33.8
	1-2 years	101	43.2	43.2
	3-4 years	47	20.1	20.1
	5-6 years	7	3.0	3.0
	Total	234	100.0	100.0

Source: Field Data (2015)

The merchants were asked to indicate the length of time that they have been MTN Mobile Money merchants. From Table 4.7.2, it could be seen that 33.8% of the respondents have been merchants for less than a year whereas 43.2% have been merchants between 1 to 2 years now. Those who have been in the business for within 3 to 4 years constituted 20.1% of the merchants and only 3.0% have been merchants for between 5 to 6 years. Thus 97% of the merchants started business within the last four years which corresponds to the high usage within these

years. It can therefore be concluded that usage of mobile money is linked to the availability of merchants.

Table 4.8.1 *PIN sharing*

		Frequency	Percentage	Valid Percentage
Valid	Yes	26	10.7	11.2
	No	207	85.5	88.8
	Total	233	96.3	100.0
Missing	System	9	3.7	
Total		242	100.0	

Source: Field Data (2015)

Users were asked whether they share their PIN with others or not. This was to establish the assertion made by Afanu and Mamattah (2013) that PIN sharing is a security threat to the use of mobile money in Ghana. It was realized that only 11.2% of respondents share their PIN with others whiles 88.8% do not share their PIN. This goes to show that the security risk related to PIN sharing as asserted by Afanu and Mamattah (2013) is low with regards to MTN Mobile Money. This can be attributed to the high number of literates who patronize the service.

Table 4.8.2 *Sex of respondents vs. PIN sharing Cross tabulation*

			PIN sharing		Total
			Yes	No	
Sex of respondents	Male	Count	11	125	136
		Expected Count	15.2	120.8	136.0
		% within PIN sharing	42.3%	60.4%	58.4%
	Female	Count	15	82	97
		Expected Count	10.8	86.2	97.0
		% within PIN sharing	57.7%	39.6%	41.6%
Total		Count	26	207	233
		Expected Count	26.0	207.0	233.0
		% within PIN sharing	100.0%	100.0%	100.0%

Source: Field Data (2015)

Table 4.8.3 *Chi–Square Test for Sex of respondents vs. PIN sharing Cross tabulation*

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	3.107[a]	1	0.078		
Continuity Correction[b]	2.407	1	0.121		
Likelihood Ratio	3.057	1	0.080		
Fisher's Exact Test				0.093	0.061
Linear-by-Linear Association	3.094	1	0.079		
N of Valid Cases	233				

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 10.82.
b. Computed only for a 2x2 table

Source: Field Data (2015)

A cross tabulation was carried out concerning demographic characteristics of respondents who are likely to share their PIN. The result from the table indicates that out of the 26 users who

share their PIN, 11 (42.3%) are males and 15 (57.7%) are females. Thus, females are more likely to share their PIN than males.

However, the chi–square statistics (Pearson Chi-Square value) indicates that this is not statistically significant ($X^2 = 3.107$, p = 0.078), since there is a 7.8% probability that this occurred by chance.

4.3.2 Purchase of Electronic cash by Merchants

Merchants obtain electronic cash from the partner banks which are loaded onto their wallets. Their MSISDNs are virtual accounts created by the banks. The frequency of electronic cash purchases and the amount usually purchased by merchants is discussed under this section.

The merchants were asked to indicate their frequency of electronic cash purchase and this is presented in Table 4.9 below.

Table 4.9 *Frequency of purchasing electronic cash*

		Frequency	Percentage	Valid Percentage
Valid	Daily	169	72.2	73.5
	Weekly	41	17.5	17.8
	Bi-weekly	13	5.6	5.7
	Monthly	7	3.0	3.0
	Total	230	98.3	100.0
Missing	System	4	1.7	
Total		234	100.0	

Source: Field Data (2015)

It is shown that majority of the respondents make very frequent purchases of electronic cash. Those who make daily purchases alone make up 73.5% while 17.8% also make weekly purchases. Bi-weekly and monthly purchasers make up just 5.7% and 3.0% respectively. Thus,

it could be inferred that merchants do not keep much electronic cash for long but purchase it more frequently, usually on a daily basis.

Table 4.10 *Amount of electronic cash purchased*

		Frequency	Percentage	Valid Percentage
Valid	Below GH¢1,000	40	17.1	17.2
	GH¢1,000 to 2,000	89	38.0	38.4
	GH¢2,000 to 5,000	97	41.5	41.8
	Other	6	2.6	2.6
	Total	232	99.1	100.0
Missing	System	2	.9	
Total		234	100.0	

Source: Field Data (2015)

In order to assess in monetary terms the real electronic cash amount usually purchased by merchants, they were asked to indicate this in a range of figures. From Table 4.10, it could be seen that only 17.2% of merchants mostly purchase electronic cash below GH¢1,000. Merchants whose purchases are between GH¢1,000 and GH¢2,000 make up 38.4% while purchases of between GH¢2,000 to GH¢5,000 are made by 41.8% of the merchants. Only 2.6% of the merchants indicated that they make purchases other than the given amounts. These amounts ranged between GH¢7,000 and GH¢12,000.

Therefore it could be said that most of the merchants make electronic cash purchases of between GH¢1,000 and GH¢5,000.

4.3.3 Merchants and users evaluation of frequency of use

The frequency of patronage of MTN Mobile Money services by users as assessed by the merchants is presented in this section. Also, the users" own assessment of their frequency of patronage of these services is also discussed here.

Table 4.11.1 *Merchants Assessment of frequency of patronage of MTN Mobile Money services*

Transaction service	Most frequently	Frequently	Neutral / Not sure	Less frequently	Never
Money Transfer	157 (68.0%)	62 (26.8%)	4 (1.7%)	8 (3.5%)	0
MTN Airtime top up	3 (1.3%)	21 (9.2%)	24 (10.5%)	90 (39.5%)	90 (39.5%)
Cashing out	180 (77.9%)	44 (19.0%)	5 (2.2%)	1 (0.4%)	1 (0.4 %)
Paying bills using MTN Mobile Money	4 (1.8%)	1 (0.4%)	10 (4.4%)	42 (18.7%)	168 (74.7%)

Source: Field Data (2015)

From the table above, money transfer and cash out services recorded the highest number of most frequent patronage (68.0% and 77.9% respectively) and also frequent patronage (26.8% and 19.0% respectively). This gives an indication that from the merchants" point of view, users of MTN Mobile Money mostly use it to send and receive money. This has the potential of taking away the withdrawal and deposit function of banks since most users find it convenient and easy to send and receive money using MTN Mobile Money.

The highest number of less frequent patronage was recorded by the MTN Airtime top up (39.5%) and payment of bills services (18.7%). Interestingly, all merchants agreed that users

always patronize the money transfer services. However services that are usually never patronized which recorded the highest response were payment of bills (74.7%) and MTN Airtime top up services (39.5%).

This shows that much education must be focused on services other than sending and receiving money since that has become the traditional use for MTN Mobile Money. Special attention must be given to the payment of bills services since it is the service that people will use to make payment for items using the mobile money instead of cash, as we strive to transform the economy into a cashless one.

Table 4.11.2 *Users' frequency of transacting MTN Mobile Money Services*

Activity	Most frequently	Frequently	Neutral/ not sure	Less frequently	Never
Using Mobile Money	104 (44.1%)	99 (41.9%)	11 (4.7%)	22 (9.3%)	0
Changing PIN	1 (0.4%)	9 (3.9%)	11 (4.7%)	24 (10.3%)	188 (80.7%)
Money transfer	34 (14.6%)	88 (37.8%)	19 (8.1%)	58 (24.9%)	34 (14.6%)
MTN Airtime top up	60 (25.6%)	75 (32.1%)	19 (8.1%)	27 (11.5%)	53 (22.6%)
Cashing out	94 (40.0%)	86 (36.6%)	15 (6.4%)	32 (13.6%)	8 (3.4%)
Paying bills using MTN Mobile Money	3 (1.3%)	8 (3.4%)	13 (5.6%)	32 (13.7%)	177 (76.0%)

Source: Field Data (2015)

Users were also made to indicate their frequency of carrying out MTN Mobile Money transactions and the results are indicated in Table 4.11.2.

In relation to the general use of MTN Mobile Money, the results indicated that a great number of users use it very regularly. This was shown by 44.1% who use it most frequently and 41.9% who use it frequently. Only 9.3% use it less frequently and none of them has never used the

service before. Users who were neutral on the general use of the services were 4.7%. Majority of users have never changed their PIN before since 80.7% of users were found to have never changed their PIN whereas a further 10.3% do change it less frequently. Only 0.4% and 3.9% respectively do change it most frequently or frequently. PIN changing is a security measure that must be done frequently. Even though it was discovered earlier that 88.8% of users do not share their PIN, the high number of users who do not change their PIN creates a security threat for users of MTN Mobile Money.

With regards to the patronage of mobile money services, users indicated a high patronage for cash out services as 40.0% indicated that they do it most frequently and 36.6% do it frequently. Only 14.6% and 37.8% respectively patronize money transfer services most frequently and frequently. This indicates that users are mostly interested in receiving money rather than sending money which is also confirmed by the few number of users who have never used cash out services (3.4%) as compared to the 14.6% of users who have never used money transfer services.

The MTN Airtime top up service recorded a good number of frequent users (32.1%) as well as quite an impressive number (25.6%) who patronize it most frequently. This debunks the earlier assertion made by the merchants that only 1.3% and 9.2% of users patronize it most frequently and frequently. This can be attributed to the fact that users do not necessarily have to go to the merchants to patronize this service. Once they have money in their wallets, users can easily top up their airtime from their own wallet.

Users however confirmed the merchants" assertion that payment of bills is the least patronized MTN Mobile Money service since 76.0% of users claimed to have never used the service. Those who use it less frequently were 13.6% whereas 5.6% remained neutral. Only 3.4% were of the view that they have been doing this frequently and just 1.3% showing a most frequent use of this service. Much education must be done to reverse this trend. To promote a cashless

economy, users must do less cashing out to obtain cash and rather do more payments of goods and services without cash, thus through mobile money.

Table 4.12.1 *Sex of respondents vs. Frequency of using mobile money Cross tabulation*

		Frequency of using mobile money				Total
		Most Frequently	Frequently	Neutral /Not sure	Less Frequently	
Sex of respondents	**Male** Count	47	63	7	17	134
	Expected Count	59.1	56.2	6.2	12.5	134.0
	% within Sex of respondents	35.1%	47.0%	5.2%	12.7%	100.0%
	Female Count	57	36	4	5	102
	Expected Count	44.9	42.8	4.8	9.5	102.0
	% within Sex of respondents	55.9%	35.3%	3.9%	4.9%	100.0%
Total	Count	104	99	11	22	236
	Expected Count	104.0	99.0	11.0	22.0	236.0
	% within Sex of respondents	44.1%	41.9%	4.7%	9.3%	100.0%

Source: Field Data (2015)

Table 4.12.2 *Chi-Square Test for Sex of respondents vs. Frequency of using mobile money Cross tabulation*

	Value	df	Asymp. Sig. (2sided)
Pearson Chi-Square	11.562[a]	3	0.009
Likelihood Ratio	11.813	3	0.008
Linear-by-Linear Association	10.021	1	0.002
N of Valid Cases	236		

a. 1 cells (12.5%) have expected count less than 5. The minimum expected count is 4.75.

Source: Field Data (2015)

A cross tabulation was done to identify the demographic characteristics of users who frequently used mobile money. Although 1 cell had less count, the chi–square table show this to be significant. (X^2 = 11.562, p = 0.009) with a probability of 0.9% that it occurred by chance; therefore, it is not likely to have occurred by chance.

Out of the total responses by males, 47 (35.1%) use mobile money most frequently and 63 (47.0%) use it frequently. For the females, 57 (55.9%) use mobile money most frequently and 36 (35.3%) use it frequently. Cumulatively, 110 (82.1%) of males and 93 (91.2%) of females largely use mobile money frequently.

Table 4.12.3 *Sex of respondents vs. Frequency of using mobile money vs. Marital status Cross tabulation*

Marital status		Frequency of using mobile money				Total
		Most Frequently	Frequently	Neutral / Not sure	Less Frequently	
Single	Sex of respondents Male	26	38	6	11	81
	Female	47	22	2	3	74
	Total	73	60	8	14	155
Married	Sex of respondents Male	18	22	1	5	46
	Female	10	8	2	1	21
				3	6	67

Divorced	Total		28	30		0	4
	Sex of respondents	Male	2	2		1	5
		Female	0	4			
	Total		2	6		1	9
Total	Sex of respondents	Male	46	62	7	16	131
		Female	57	34	4	5	100
	Total		103	96	11	21	231

Source: Field Data (2015)

Table 4.12.4 *Chi-Square Test for Sex of respondents vs. Frequency of using mobile money vs. Marital status Cross tabulation*

Marital status		Value	df	Asymp. Sig. (2sided)
Single	Pearson Chi-Square	16.597[b]	3	0.001
	Likelihood Ratio	17.083	3	0.001
	Linear-by-Linear Association	14.144	1	0.000
	N of Valid Cases	155		
Married	Pearson Chi-Square	2.894[c]	3	0.408 0.423
	Likelihood Ratio	2.805	3	0.570
	Linear-by-Linear Association	.323	1	
	N of Valid Cases	67		
Divorced	Pearson Chi-Square	3.600[d]	2	0.165 0.094
	Likelihood Ratio	4.727	2	0.121
	Linear-by-Linear Association	2.400	1	

Total	N of Valid Cases	9		0.007
	Pearson Chi-Square	11.977ᵃ	3	
	Likelihood Ratio	12.179	3	0.007
	Linear-by-Linear Association	9.881	1	0.002
	N of Valid Cases	231		

a. 1 cells (12.5%) have expected count less than 5. The minimum expected count is 4.76.

b. 2 cells (25.0%) have expected count less than 5. The minimum expected count is 3.82.

c. 4 cells (50.0%) have expected count less than 5. The minimum expected count is 0.94.

d. 6 cells (100.0%) have expected count less than 5. The minimum expected count is 0.44.

Source: Field Data (2015)

Further analysis show that out of the 93 females who frequently use mobile money, 69 (74.2%) are single, 18 (19.4%) are married, 4 (4.3%) are divorced and 2 (2.1%) are unknown. This indicates that females who are single use mobile money more often than men.

Finally, out of the 69 single females who use mobile money frequently, 8 (11.6%) are less than 18 years of age, 48 (69.6%) are between 18 and 25 years, 11 (15.9%) are between 26 and 30 years, 2 (2.9%) are between 31 to 40 years and none is above 40 years.

Therefore, single females between the ages of 18 and 25 years use mobile money more often than men.

4.3.4 General Assessment of mobile money services by users and merchants

The users and merchants were made to give their perception of the mobile money services by indicating their level of agreement, disagreement or otherwise with some specific statements related to their experience in using the services.

Table 4.13.1 indicate that 82.6% of users do not have any difficult in using the MTN Mobile Money menu which may be because of the simplicity of the menu format. 3.4% were not sure

of their response and 14.0% encountered difficulty. This confirms the findings of Appiah et al. (2014) that e–payment systems are easy to be used and user friendly.

In terms of affordability, 62.4% agreed that the charges are affordable with 12.0% not sure of their response and 25.6% disagreeing. This also confirms the findings of Appiah et al. (2014) that e–payment systems are affordable.

Other statements with the greatest level of agreement by users include: the safety and security of the mobile money wallet (85.8%), recommendation of the service to other people (91.5%), satisfaction with the service (81.2%) and resolve by users to continue with the service (81.7%). It could be inferred from these figures that users find the MTN Mobile Money menu easy to use and their wallets are very safe and secured. They find the service affordable and users are much satisfied with it to the extent that most of them have not only resolved to continue its use but also recommend it to other people.

Table 4.13.1 *Users' Assessment of MTN Mobile Money service*

Activity	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
Ease of using MTN Mobile Money menu	17 (7.2%)	16 (6.8%)	8 (3.4%)	118 (50.0%)	77 (32.6%)
Affordability of MTN Mobile Money charges	19 (8.1%)	41 (17.5%)	28 (12.0%)	124 (53.0%)	22 (9.4%)
Safety and security of wallet	10 (4.3%)	17 (7.3%)	6 (2.6%)	133 (56.8%)	68 (29.0%)
Ease of using token	22 (9.4%)	47 (20.2%)	65 (27.9%)	79 (33.9%)	20 (8.6%)
No problems when accessing any mobile money service	25 (10.8%)	74 (31.9%)	30 (12.9%)	76 (32.8%)	27 (11.6%)
Recommendation of MTN Mobile Money	2 (0.8%)	8 (3.4%)	10 (4.3%)	120 (51.3%)	94 (40.2%)

to other people					
Satisfaction with services	5 (2.1%)	26 (11.1%)	13 (5.5%)	119 (50.6%)	72 (30.6%)
User will always use MTN Mobile Money	6 (2.6%)	7 (3.0%)	29 (12.6%)	110 (47.8%)	78 (33.9%)
Considering to stop using MTN Mobile Money	98 (41.9%)	116 (49.6%)	12 (5.1%)	6 (2.6%)	2 (0.8%)
User wished mobile money services had never been invented	128 (53.8%)	52 (21.8%)	14 (5.9%)	36 (15.1%)	8 (3.4%)

Source: Field Data (2015)

However, some of the statements received a stronger disagreement from users. This includes consideration to stop the use of the service (91.5%) and wishing that the mobile money service had never been invented (75.6%). Users" strong response of not considering stopping to use the mobile money services confirms the earlier submission that they have resolved to continue its use and recommend the services to others. The large number, 75.6%, who are happy that mobile money was invented shows that much will be achieved if all of the challenges they face are resolved and the services run smoothly.

Two opposing views were identified concerning the likelihood of having problems when accessing the service. Users who agreed that they do not encounter any problems while using the service were 44.4% whereas 42.7% disagreed and 12.9% remained neutral. This implies that there are times when users encounter problems when accessing the service but at other times, are problem free.

Users who agreed that using a token is easy were 42.5% whiles 29.6% disagreed and 27.9% were not sure of their response. This showed that almost equal number of users disagreed just

as those who were neutral. This can be attributed to the fact that only few people use the token service hence most users who have never used the service failed to comment on its status.

Table 4.13.2 *Merchants' assessment of use of MTN Mobile Money services*

Activity	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
It is very profitable	12 (5.1%)	22 (9.4%)	35 (15.0%)	143 (61.1%)	22 (9.4%)
High patronage of mobile money service	14 (6.0%)	15 (6.4%)	19 (8.2%)	120 (51.5%)	65 (27.9%)
Transaction charges are expensive	27 (11.6%)	93 (40.1%)	38 (16.4%)	63 (27.2%)	11 (4.7%)
Most customers use the token service	64 (27.5%)	92 (39.5%)	29 (12.4%)	46 (19.7%)	2 (0.9%)
Recommend others to become MTN Mobile Money merchants	27 (11.6%)	33 (14.2%)	46 (19.8%)	100 (43.1%)	26 (11.2%)
Customers understand how the mobile money service works	47 (20.1%)	40 (17.1%)	43 (18.4%)	84 (35.9%)	20 (8.5%)
Customers are satisfied with the MTN Mobile Money service	25 (10.7%)	41 (17.6%)	9 (3.9%)	110 (47.2%)	48 (20.6%)
Merchant is considering stopping the MTN Mobile Money business	111 (47.4%)	83 (35.5%)	17 (7.3%)	16 (6.8%)	7 (3.0%)

Source: Field Data (2015)

The results indicate that 70.5% of merchants agreed that the MTN Mobile Money business is very profitable whiles only 14.5% disagreed and 15.0% remained neutral. Interestingly, 82.9% said they are not considering stopping the business whereas 7.3% were not sure and only 9.8% want to stop. In fact, 47.4% are strongly not considering stopping the business. It can therefore be inferred that due to the high profitability, most merchants are not ready to stop the business. The few who are considering stopping may be forced to do so due to competition or lack of capital to purchase more electronic cash.

However, 54.3% of merchants were willing to recommend others to become merchants whereas 25.8% disagreed and 19.8% were not sure. The level of recommendation, which is a little over half of the merchants, is quite low if compared to 91.5% of users who would recommend MTN Mobile Money to others. This may be attributed to the fact that some merchants are not ready to create competition around them that will reduce their profitability.

Other statements that were given a strong agreement includes: the patronage of the mobile money services (79.4%) and customer satisfaction with the services (67.8%). This conforms to the responses of users that they are very satisfied with the services and this has led to the high patronage.

Merchants" view on affordability of transaction charges was in line with that of users since 51.7% disagreed that transaction charges are expensive and only 31.9% agreed. Thus merchants also largely agreed that transaction charges are affordable just as the users did.

Merchants also confirmed that most users do not use the token service. Only 20.6% agreed that customers use the token service whereas 67.0% disagreed and 12.4% were not sure. This conforms to the earlier assertion made that most users do not use the token service hence found it difficult to comment about its ease of use.

Finally, 44.4% of merchants agreed that customers understand how the MTN Mobile Money works whereas 37.2% disagreed and 18.4% remained neutral. The relatively high disagreement can be attributed to the fact that most customers give their phones to the merchants to perform the cash out service on their behalf. Merchants therefore have the notion that customers have average understanding of how the mobile money system works.

4.4 Challenges confronting users and merchants

4.4.1 Respondents' response to some stated challenges

The respondents were asked to indicate the intensity or otherwise of certain challenges when using the MTN Mobile Money services and their responses are given below.

Table 4.14.1 *Users' assessment on challenges of the MTN Mobile Money Service*

Challenge	Very low	Low	High	Very high	Highest
Network or service stability or availability	28 (12.0%)	39 (16.7%)	57 (24.5%)	38 (16.3%)	71 (30.5%)
Limit on amount of money users can cash out from merchants	84 (36.5%)	44 (19.1%)	50 (21.7%)	27 (11.7%)	25 (10.9%)
The availability of merchants	97 (41.6%)	34 (14.6%)	45 (19.3%)	23 (9.9%)	34 (14.6%)
Forgetting PIN	133 (57.6%)	28 (12.1%)	20 (8.7%)	10 (4.3%)	40 (17.3%)
Knowing how to use the Mobile Money Menu	101 (43.5%)	36 (15.5%)	20 (8.6%)	19 (8.2%)	56 (24.1%)

Source: Field Data (2015)

It could be seen from the table that the users consider network or service stability and availability as the greatest challenge to the use of the MTN Mobile Money service since most of the users ranked it highest (30.5%). Cumulatively, 71.3% of users ranked it in the high to highest bracket whiles 28.7% ranked it in the low to very low category. This conforms to the findings of Amankwa and Kevor (2013) that the success of mobile money is dependent on the stability and availability of the network.

Interestingly, none of the other challenges recorded a cumulative rating of more than 50% in the high to highest category. A total of 44.3% of users ranked the limit on amount of money users can conveniently cash out from merchants in the high to highest bracket whereas 55.6%

ranked it in the low to very low bracket. Users have a limit of GH¢1,000 to cash out per day which they want increased or even have no limit per day.

A total of 43.8% of users ranked the availability of merchants in the high to highest bracket whereas 56.2% ranked it in the low to very low bracket. This attests to the fact that there are numerous merchants entering into the business over the past two years and most users do not find locating a merchant as a high challenge. A total of 40.9% of users ranked the knowledge on the use of the mobile money menu in the high to highest bracket whereas 59.0% ranked it in the low to very low bracket.

Finally, 30.3% of users ranked the likelihood of forgetting their PIN in the high to highest bracket whereas 69.7% ranked it in the low to very low bracket. This low ranking can be attributed to the fact that most of the users never change their PIN so it will be very easy for them to recall it.

Table 4.14.2 *Merchants' assessment of challenges of MTN Mobile Money services*

Activity	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
Ease of correcting wrong transactions	126 (54.1%)	65 (27.9%)	11 (4.7%)	26 (11.2%)	5 (2.11%)
Ease of getting e–cash to purchase	26 (11.1%)	43 (18.5%)	26 (11.1%)	119 (51.1%)	19 (8.2%)
Network is stable for transactions	67 (28.7%)	96 (41.2%)	33 (14.2%)	34 (14.6%)	3 (1.3%)
Numerous merchants in my area	14 (6.0%)	60 (25.9%)	18 (7.8%)	90 (38.8%)	50 (21.5%)
Money collected from customer is safe with merchant	18 (7.8%)	68 (29.6%)	18 (7.8%)	91 (39.6%)	35 (15.2%)

Source: Field Data (2015)

Merchants found the ease of correcting wrong transactions as their greatest challenge with 54.1% strongly disagreeing that it is easy to correct wrong transactions. Cumulatively, 82.0% of merchants disagreed on this matter whereas only 13.3% agreed and 4.7% were not sure. They also found network stability as a great challenge since 69.9% cumulatively disagreed with the fact that they enjoy a stable network for their transactions. Only 15.9% agreed that the network is stable for them and 14.2% were not sure.

Interestingly, 60.3% of merchants largely agreed that there are numerous merchants in their area, a situation that can cripple their business whereas 31.9% largely disagreed and 7.8% were not sure. The numerous merchants is a good prospect for MTN since the service will be available to users as and when they require it. Users also largely confirmed that they do not have difficulty locating merchants in their area. However, merchants are not happy with the increasing number of merchants in the system since it has the potential of reducing their profitability. This may account for the merchants" low level of recommending others to become merchants.

The ease of obtaining electronic cash and the safety of money collected by the merchants were least of their worries since 59.3% of them largely agreed that it is easy to obtain electronic cash whereas 29.6% largely disagreed and 11.1% were not sure. The substantial number of disagreement could be attributed to difficulty by some of the merchants to have access to the partner banks. Merchants located in towns that have no branches of the partner banks must travel to other towns where they can be found or develop their own ways of obtaining electronic cash for their transactions.

A total of 54.8% of the merchants largely agreed that the money that they collect from users is safe with them whereas 37.4% largely disagreed and 7.8% were not sure. The substantial

number that disagreed is a source of concern since they may be open to robberies which can harm their business.

4.4.2 Respondents' suggested challenges

Aside these challenges, the users and merchants were allowed to list other challenges they face in assessing the MTN Mobile Money services.

Analysis show that 159 (65.7%) users failed to state any new challenges whereas 115 (49.1%) merchants also failed to state any new challenges which indicated that they considered the stated challenges as the only challenges they encounter. Only 83 (34.3%) users and 119 (50.9%) merchants stated some challenges.

The responses from users were mainly centred on issues such as network instability and unavailability, high charges, reversal of wrong transactions, cash out limits and tendency to forget PIN. The responses from merchants also strongly touched on network instability and unavailability, reversal of wrong transactions, difficulty in obtaining electronic cash, high charges and customer"s inability to operate the menu.

All these challenges have already been discussed but for users and merchants to go ahead and indicate them again strongly suggests that these are items they consider as great challenges that must be addressed as soon as possible.

Table 4.15.1 shows the challenges listed by the users and merchants and the number and percentage of respondents who stated those challenges.

Table 4.15.1 *Users' and Merchants' stated challenges of MTN Mobile Money services*

Users		Merchants	
Network stability and availability	59 (71.1%)	Network stability and availability	72 (60.5%)
High charges	6 (7.2%)	Reversal of wrong transactions	22 (18.5%)
Reversal of wrong transactions	5 (6.0%)	Difficulty in obtaining electronic cash	8 (6.7%)
Cash out limit	4 (4.8%)	High charges	7 (5.9%)
Tendency to forget PIN	1 (1.2%)	Customer''s inability to operate the menu	3 (2.5%)
Others (New)	8 (9.6%)	Others (New)	7 (5.9%)

Source: Field Data (2015)

Table 4.15.2 lists the significant new challenges stated by users and merchants which can affect the operation of MTN Mobile Money.

Table 4.15.2 *Users' and merchants' suggested challenges*

Users	Merchants
Increase in fraudulent activities	Inability to charge phones due to load shedding
No instant message prompt when money is received	Robbery
No response when calling Customer care for assistance	Fake currency
Poor treatment by merchant	No instant message prompt after transaction leading to double transfer
Merchants do not have enough cash	Commission payment problems
Long queues at merchant's location	Customers have no knowledge of the charges hence they complain when deductions are made

Source: Field Data (2015)

Merchants were asked about the safety of monies they collect from customers and 37.4% of them disagreed that the monies are safe with them. It is therefore not surprising that some

merchants identified robberies and fake currency as a challenge since the substantial number that disagreed may be open to such nefarious activities which can harm their business.

4.5 Level of preference for MTN Mobile Money as compared to bank transaction, ATM and e–ZWICH

4.5.1 General assessment of preference levels

Users were asked to indicate their level of preference between some selected transactions including mobile money in order to draw analysis between preferences for certain cashless transactions or even bank transactions.

Table 4.16.1 *Preference for cash or mobile money or both*

		Frequency	Percentage	Valid Percentage
Valid	Cash	15	6.2	6.3
	Mobile Money	122	50.4	51.5
	Both	100	41.3	42.2
	Total	237	97.9	100.0
Missing	System	5	2.1	
Total		242	100.0	

Source: Field Data (2015)

More than half of the users (51.5%) were in favour of using mobile money only as compared to physical cash or both. The table also show that 42.2% preferred having both mobile money and physical cash and only 6.3% were in favour of having physical cash over mobile money. This shows that people are gradually moving away from the dependence of only physical cash in their pocket and would rather have mobile money or both mobile money and cash rather than only cash. People therefore have high interest in using mobile money.

Table 4.16.2 *Level of education vs. Preference for cash or mobile money or both Cross tabulation*

			Preference of cash or mobile money or both			Total
			Cash	Mobile Money	Both	
	Basic	Count	1	2	2	5
		Expected Count	0.3	2.6	2.1	5.0
		% within Level of education	20.0%	40.0%	40.0%	100.0%
	JHS	Count	5	28	9	42
		Expected Count	2.7	21.7	17.6	42.0
		% within Level of education	11.9%	66.7%	21.4%	100.0%
Level of education	SHS	Count	6	50	27	83
		Expected Count	5.3	42.9	34.8	83.0
		% within Level of education	7.2%	60.2%	32.5%	100.0%
	Tertiary	Count	3	39	52	94
		Expected Count	6.0	48.6	39.4	94.0
		% within Level of education	3.2%	41.5%	55.3%	100.0%
	None	Count	0	3	9	12
		Expected Count	0.8	6.2	5.0	12.0
		% within Level of education	0.0%	25.0%	75.0%	100.0%
Total		Count	15	122	99	236
		Expected Count	15.0	122.0	99.0	236.0
		% within Level of education	6.4%	51.7%	41.9%	100.0%

Source: Field Data (2015)

Table 4.16.3 *Chi-Square Test for Level of education vs. Preference for cash or mobile money or both Cross tabulation*

	Value	Df	Asymp. Sig. (2-sided)
Pearson Chi-Square	25.623[a]	8 8	0.001
Likelihood Ratio	26.201		0.001
Linear-by-Linear Association	21.187	1	0.000
N of Valid Cases	236		

a. 5 cells (33.3%) have expected count less than 5. The minimum expected count is 0.32.

Source: Field Data (2015)

A cross tabulation of users" educational level versus their preference for cash, mobile money or both was further analyzed.

The preference for cash transactions decreased with increasing levels of educational qualification and people educated up to the JHS (66.7%) and SHS (60.2%) levels have the highest preference for only mobile money in their pocket. Users with no level of education showed the highest preference for both cash and mobile money transactions, 75.0% indicated preference for this type of transaction. This confirms the earlier assertion that educated people are more likely to embrace mobile money services. Generally most males prefer both cash and mobile money than females since 65 (65.7%) of males as compared to 34 (34.3%) of females indicated preference for this type of transaction.

Although it is displayed that some cells have expected count less than 5, the chi–square table show this to be significant ($X^2 = 25.623$, p = 0.001) with a probability of 0.1% that it occurred by chance; therefore, it is not likely to have occurred by chance.

Further analysis (as presented in Table 4.16.4) show that out of the 28 (66.7%) with JHS level, 11 (39.3%) are males and 17 (60.7%) are females. Out of the 50 (60.2%) with SHS level, 23

(46.0%) are males and 27 (54.0%) are females. This clearly indicates that females with JHS or

SHS level of education tend to prefer only mobile money in their pocket.

The chi–square test as presented in Table 4.16.5 below indicates that this is statistically

significant although it displayed that some cells have expected count less than 5. For the males

(X^2 = 26.621, p = 0.001) and for the females (X^2 = 16.363, p = 0.037), thus a probability of

0.1% and 3.7% respectively, that it occurred by chance, which is statistically significant.

Table 4.16.4 *Level of education vs. Preference for cash or mobile money or both vs. Sex of respondents Cross tabulation*

Sex of respondents		Preference of cash or mobile money or both			Total
		Cash	Mobile Money	Both	
Male	Level of education	Basic	1	0	0	1
		JHS	5	11	8	24
		SHS	4	23	11	38
		Tertiary	3	23	42	68
		None	0	2	4	6
	Total		13	59	65	137
Female	Level of education	Basic	0	2	2	4
		JHS	0	17	1	18
		SHS	2	27	16	45
		Tertiary	0	16	10	26
		None	0	1	5	6
	Total		2	63	34	99
Total	Level of education	Basic	1	2	2	5
		JHS	5	28	9	42
		SHS	6	50	27	83
		Tertiary	3	39	52	94
		None	0	3	9	12
	Total		15	122	99	236

Source: Field Data (2015)

Table 4.16.5 *Chi-Square Test for Level of education vs. Preference for cash or mobile money or both vs. Sex of respondents Cross tabulation*

Sex of respondents		Value	df	Asymp. Sig. (2sided)
Male	Pearson Chi-Square	26.621[b]	8	0.001
	Likelihood Ratio	22.057	8	0.005
	Linear-by-Linear Association			
	N of Valid Cases	15.380	1	0.000
		137		
Female	Pearson Chi-Square	16.363[c]	8	0.037
	Likelihood Ratio	18.782	8	0.016
	Linear-by-Linear Association	5.723	1	0.017
	N of Valid Cases	99		
	Pearson Chi-Square	25.623[a]	8	0.001
	Likelihood Ratio	26.201	8	0.001
	Linear-by-Linear Association			
		21.187	1	0.000
Total	N of Valid Cases	236		

a.   5 cells (33.3%) have expected count less than 5. The minimum expected count is .32.

b.   8 cells (53.3%) have expected count less than 5. The minimum expected count is .09.

c.   9 cells (60.0%) have expected count less than 5. The minimum expected count is .08.

Source: Field Data (2015)

Table 4.17.1 *Ownership of Bank account*

		Frequency	Percentage	Valid Percentage
	Yes	163	67.4	67.6
Valid	No	78	32.2	32.4
	Total	241	99.6	100.0
Missing	System	1	0.4	
Total		242	100.0	

Source: Field Data (2015)

Users of MTN Mobile Money service were asked to indicate whether or not they had a bank account. The result as displayed in Table 4.17.1 shows that 67.6% of them have a bank account while 32.4% did not have a bank account. Thus about two–thirds of the users had a bank account. This indicates that even though most users have bank accounts, they find it more convenient and easy to make transactions using MTN Mobile Money. Also, without mobile money, 32.4% of users would have been denied access to financial services since they do not operate bank accounts.

Table 4.17.2 *Age vs. Ownership of Bank account Cross tabulation*

		Ownership of Bank account		Total
		Yes	No	
Below 18 years	Count	7	11	18
	Expected Count	12.2	5.8	18.0
	% within Age	38.9%	61.1%	100.0%
	Count	71	38	109

Age	18-25 years	Expected Count	73.7	35.3	109.0
		% within Age	65.1%	34.9%	100.0%
	26-30 years	Count	33	13	46
		Expected Count	31.1	14.9	46.0
		% within Age	71.7%	28.3%	100.0%
	31-40 years	Count	38	10	48
		Expected Count	32.5	15.5	48.0
Total	Above 40 years	% within Age	79.2%	20.8%	100.0%
		Count	14	6	20
		Expected Count	13.5	6.5	20.0
		% within Age	70.0%	30.0%	100.0%
		Count	163	78	241
		Expected Count	163.0	78.0	241.0
		% within Age	67.6%	32.4%	100.0%

Source: Field Data (2015)

Table 4.17.3 *Chi–Square Test for Age vs. Ownership of Bank account Cross tabulation*

	Value	Df	Asymp. Sig. (2-sided)
Pearson Chi-Square	10.426[a]	4	0.034
Likelihood Ratio	10.111	4	0.039
Linear-by-Linear Association	5.885	1	0.015
N of Valid Cases	241		

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 5.83.

Source: Field Data (2015)

A cross tabulation of users who have a bank account versus the age categories of users presented above shows that a greater percentage of users in the higher age categories have a bank account as compared to users in the lower age categories. The percentage of users with a bank account increased from the lower age bracket to the higher ones as 38.9% of those below

the age of 18 years have a bank account, 65.1% of users from 18 to 25 years possessed a bank account while 71.7% of users between 26 to 30 years have a bank account. Also, 79.2% of users within the age of 31 to 40 years have bank accounts while 70.0% of those above 40 years owned a bank account.

The chi–square statistics table presented showed that this result is statistically significant and thus there is a relationship between the age group of users and their ownership of bank accounts (X^2 = 10.426, p = 0.034). Thus, there is a 3.4% probability that this occurred by chance which is statistically significant.

Therefore, it could be concluded that the research found that the older a person is, the more likely he or she is to own a bank account.

Table 4.18.1 *Users' frequency of going to the bank*

Activity	**Most frequently**	**Frequently**	**Neutral/ not sure**	**Less frequently**	**Never**
Going to the bank	18 (7.5%)	48 (20.1%)	30 (12.6%)	109 (45.6%)	34 (14.2%)

Source: Field Data (2015)

Users were also made to indicate their frequency of going to the bank. It was found that majority of the users do it less frequently (45.6%). It was only a handful of users (7.5%) who go to the bank most frequently or frequently (20.1%). However a substantial number of them never go to the bank (14.2%) whiles 12.6% of users were neutral on this issue.

Further analysis was done to establish a relationship between those who own bank accounts and the frequency with which they visit the bank.

Table 4.18.2 *Ownership of Bank account vs. Frequency of going to the bank Cross tabulation*

		\multicolumn{5}{c}{Frequency of going to the bank}					Total
		Most Frequently	Frequently	Neutral / Not sure	Less Frequently	Never	
Ownership of Bank account	Yes	Count	14	37	18	84	7	160
		% within Ownership of Bank account	8.8%	23.1%	11.2%	52.5%	4.4%	100.0%
	No	Count	4	10	12	25	27	78
		% within Ownership of Bank account	5.1%	12.8%	15.4%	32.1%	34.6%	100.0%
Total		Count	18	47	30	109	34	238
		% within Ownership of Bank account	7.6%	19.7%	12.6%	45.8%	14.3%	100.0%

Source: Field Data (2015)

Table 4.18.3 *Chi–Square Test for Ownership of Bank account vs. Frequency of going to the bank Cross tabulation*

	Value	df	Asymp. Sig. (2sided)
Pearson Chi-Square	42.795[a]	4	0.000
Likelihood Ratio	41.027	4	0.000
Linear-by-Linear Association	12.605	1	0.000
N of Valid Cases	238		

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 5.90.

Source: Field Data (2015)

The results show that out of the 160 users who own bank accounts, 84 (52.5%) of them less frequently visit the bank. Only 8.8% of them mostly visit the bank. This is statistically significant since there is no probability that it occurred by chance (X^2 = 42.795, p = 0.000). Therefore it is safe to say that ownership of a bank account does not guarantee a visit to the bank and users find other means of transacting their business outside the bank.

Table 4.19 *Users' preferred mode of transaction*

Transaction service	Most Preferred	Preferred	Undecided or neutral	Less Preferred	Least Preferred
ATM transaction	51 (24.8%)	55 (26.7%)	11 (5.3%)	31 (15.0%)	58 (28.2%)
MTN Mobile Money	138 (58.0%)	88 (37.0%)	8 (3.4%)	2 (0.8%)	2 (0.8%)
e-ZWICH	12 (5.9%)	12 (5.9%)	40 (19.5%)	54 (26.3%)	87 (42.4%)
Transaction inside a bank	20 (9.7%)	31 (15.0%)	21 (10.1%)	65 (31.4%)	70 (33.8%)

Source: Field Data (2015)

In order to find out the level of inclination for the MTN Mobile Money service as compared to other financial services transactions, users were asked to indicate their level of preference for each of these services: ATM, MTN Mobile Money, e–ZWICH and transaction inside a bank. Table 4.19 shows that 58.0% of users mostly prefer the MTN Mobile Money services and this was the highest choice of preference from all users, whiles 37.0% indicated only

"prefer". Therefore in terms of preference, 95.0% of users largely prefer to use MTN Mobile Money as compared to the other modes of transaction. Only 0.8% each indicated that they less preferred and least preferred the mobile money service (total of 1.6%). A further 3.4% were undecided.

For ATM Services, 26.7% of respondents indicated „preferred" while 24.8% selected „most preferred" as their level of preference. Thus, 51.5% of the users generally prefer ATM services. Also, users who less preferred and least preferred ATM service were 15.0% and 28.2% respectively. Thus a total of 43.2% of users do not prefer the ATM service. Only 5.3% of the users were neutral on the issue.

For transaction carried out in a bank, the preference was also very weak as only 9.7% indicated that they most preferred the service while 15.0% also preferred it, giving a total preference of just 24.7%. Those who less preferred the service were 31.4% while 33.8% least preferred it (total of 65.2%). This confirms the earlier finding that owners of bank accounts do not frequently visit the bank. It can be concluded that they prefer to use MTN Mobile Money than to go to the bank.

The preference for e-ZWICH services was much less as only a combined preference of 11.8% (5.9% each for most preferred and preferred) was recorded while 42.4% and 26.3% respectively indicated that they least preferred and less preferred the service (a total of 68.7%).

Therefore, in order of preference, users prefer MTN Mobile Money (95.0%), then ATM (51.5%), then transaction in a bank (24.7%) and finally e-ZWICH (11.8%). Only 1.6% does not prefer MTN Mobile Money, whereas 43.2% do not prefer ATM, 65.2% do not prefer transaction in a bank and 68.7% do not prefer e-ZWICH.

This confirms the findings of Issahaku (2012) that ATM is preferred over e-ZWICH. In this case, people would even prefer to have transactions in the bank than to use e-ZWICH.

4.5.2 Correlation tests between MTN Mobile Money and other transactions

To fully examine the level of preference for MTN Mobile Money as compared to bank transactions or other cashless transactions (ATM and e–ZWICH), various correlation tests were done.

Table 4.20.1 *Pearson correlation between preference for MTN Mobile Money & ATM*

		Preference for ATM	Preference for MTN Mobile Money
Preference for ATM	Pearson Correlation	1	-0.240**
	Sig. (2-tailed)		0.001
	N	206	204
Preference for MTN Mobile Money	Pearson Correlation	-0.240**	1
	Sig. (2-tailed)	0.001	
	N	204	238

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

Source: Field Data (2015)

From the correlation test table, the Pearson Correlation between preference for MTN Mobile Money and ATM is -0.240 which is statistically significant at the 0.001 level and therefore unlikely to have occurred by chance. Thus, there is a weak negative correlation between the two variable (r = -0.240, p = 0.001, r^2 = 0.0576 or 5.76%). This implies that a high preference for ATM service leads to a low preference for MTN Mobile Money and vice versa. However,

it is only 5.76% of the variance that is related to the use of ATM. Other factors also account for this variance.

Table 4.20.2 *Pearson correlation between preference for MTN Mobile Money & bank transactions*

	Preference for MTN Mobile Money	Preference for bank transaction
Pearson Correlation	1	-0.225**
Preference for MTN Mobile Sig. (2-tailed) Money		0.001
N	238	207
Pearson Correlation	-0.225**	1
Preference for bank Sig. (2-tailed) transaction	0.001	
N	207	207

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

Source: Field Data (2015)

Table 4.20.2 provides the correlation between the preference for MTN Mobile Money service and physically going to the bank for transactions. The Pearson Correlation value is given as -0.225 and statistically significant at the 0.001 level, thus, unlikely to have occurred by chance. There is a weak negative correlation between the two variables (r = -0.225, p = 0.001, r^2 = 0.050625 or 5.06%). Thus, as preference for going to the bank for transactions increase, the preference for MTN Mobile decreases and vice versa but only 5.06% of the variance is related to preference for bank transactions.

Table 4.20.3 *Pearson correlation between preference for MTN Mobile Money & e-ZWICH*

	Preference for MTN Mobile Money	Preference for e-ZWICH
Pearson Correlation	1	-0.107
Preference for MTN Mobile		0.128

Money	Sig. (2-tailed)	238	205
	N		
	Pearson Correlation	-0.107	1
		0.128	
Preference for e-ZWICH	Sig. (2-tailed)	205	205
	N		

Source: Field Data (2015)

From the correlation test table, the Pearson Correlation between preference for MTN Mobile Money and e-ZWICH is -0.107 which is significant at the 0.128 level and therefore most likely to have occurred by chance. Thus, there is a very weak negative correlation between the two variable ($r = -0.107$, $p = 0.128$, $r^2 = 0.011449$ or 1.1449%). Therefore, it could be concluded that a high preference for e-ZWICH leads to a low preference for MTN Mobile Money and vice versa. However, it is only a mere 1.1449% of the variance that is related to the use of e-ZWICH. Other factors also account for the variance. Moreover, this result is most likely to have occurred by chance.

Therefore it has been established that there is a negative correlation between MTN Mobile Money and ATM, e–ZWICH and bank transactions, though with weak variances. This means that other factors also account for this negative correlation.

Since users have shown a relatively high preference for MTN Mobile Money, it can be concluded that they have low preference for ATM, e–ZWICH and bank transactions. Factors that may account for this include the fact that the mobile phones and merchants are closer to the user than the ATMs, e–ZWICH POS and bank premises.

Users may have to move to specific locations before having access to ATMs and banks but merchants can be found within every community. With the e–ZWICH, Issahaku (2012) established that there are a number of challenges with its use such as link failure, frequent

breakdown of the POS device and its inaccessibility before and after banking hours as well as during weekends. This makes it very difficult for users to make proper use of it.

Users can easily use their phones in the comfort of their homes to make transactions instead of moving out to locate an ATM, e–ZWICH POS or a bank. Finally it is very easy to leave an ATM card, e–ZWICH card or bank withdrawal booklet/cheque book behind at home than to leave the mobile phone, so when a user needs to urgently make a transaction, the phone comes in handy first.

4.6 Proposed further uses by users and merchants

Both the users and merchants were given the opportunity to list other transactions they would like to be able to use the MTN Mobile Money to do. It must be stated that such services must be added to the payment of bills service on the mobile money menu.

Analysis show that 168 (69.4%) users failed to state any new uses whereas 195 (83.3%) merchants also failed to state any new uses. This indicated that they are content with the current services of MTN Mobile Money and do not have any other services in mind that can be added to the platform.

The high rate of users and merchants who failed to suggest new services can also be attributed to the fact that most of them never use the payment of bill service on the menu so they have no idea that mobile money can be used to pay for certain services. It was earlier established that 76.0% of users claimed to have never used the payment of bills service and merchants also agreed that 74.7% of their customers never make transactions using the payment of bills service.

However 74 (30.6%) of users and 39 (16.7%) of merchants made suggestions which have been tabulated below. **Table 4.21 *Users' and merchants' suggested new services***

New uses/services

62

Pay for transport fares
To pay national service personnels
Purchase airline ticket
Use for international money transfer
Online shopping
To use in supermarkets
To pay hospital bills
To purchase fuel
To buy things at the roadside
To buy things at the market place
To make deposits into bank account
To pay school fees
Pay water bill
Buy internet bundles
Send money to other networks
Buy food
Purchase items from factories and big companies

Source: Field Data (2015)

Some of these suggested new services conform to the proposed framework of Mensah et al. (2012) for the improvement of Mobile Money payment systems in Ghana. They expected that other services such as paying bills, taxes, school fees, purchasing items, contracting loans, checking account balances, depositing money and insuring property should be added to the mobile money services. Some of these services have been suggested by respondents in this study three years down the line.

Suggested services such as payment of transport fares, fuel, food and foodstuffs from the market, if implemented will go a long way to reduce the dependence of cash for such transactions. A lot of education must be done in this regard to make it a success.

CHAPTER FIVE

SUMMARY OF FINDINGS, CONCLUSION AND RECOMMENDATIONS

5.0 Introduction

This chapter presents the summary of the major findings from the research, draws conclusions from these findings and makes recommendations for improvement both in the industry and for academia, especially in relation to future research.

5.1 Summary of findings

5.1.1 Assessment of current uses of MTN Mobile Money

The demographic information of the users showed that there is a good balance of both males and females who patronize the MTN Mobile Money service. Although males dominate, it is by just 14.8%. It was revealed that majority of the users are young and educated people mostly to the SHS and tertiary level. Users below 30 years and female singles between the ages of 18 to 25 years were found to use the services most since 91.2% of females frequently use mobile money, out of which 74.2% are single and out of that, 69.6% are between 18 and 25 years.

The work revealed that 95.5% of the users use the MTN network, out of which 94.8% have their own mobile money wallet. Thus, only 5.2% of users of MTN network do not have a mobile money wallet but still send and receive money through mobile money using the token service. It was also found that the interest of the populace in the Mobile Money service has been increasing in recent years as it was identified that 82.6% of users and 97.0% of merchants have joined over the past four years. In fact, the last 2 years alone has witnessed

63.0% of users and 77.0% of merchants joining.
From both the merchants and users assessment of the patronage of the MTN Mobile Money service, it was revealed that the money transfer and cash out service has the most patronage from users. A total of 94.8% and 96.9% of users frequently or most frequently patronize the money transfer and cash out services respectively. No user was found to have never used the money transfer service. This gives an indication that users of MTN Mobile Money mostly use it to send and receive money.

According to merchants, services that are usually never patronized which recorded the highest response were payment of bills (74.7%) and Airtime top up services (39.5%). Users also agreed that payment of bills is the least patronized service. The merchants claimed only a total of 10.5% of users patronize the MTN Airtime top up service most frequently or frequently. This

can be attributed to the fact that users do not necessarily have to go to the merchants to top up their airtime. Once they have money in their wallets, users can easily top up their airtime from their own wallet.

The general assessment of the mobile money service by the users further revealed that 82.6% of users find the MTN Mobile Money menu easy to use, 62.4% agreed that the charges are affordable and 85.8% agreed that their mobile wallets are safe and secured.

Most users are very excited about the MTN Mobile Money service and much satisfied with it to the extent that they have not only resolved to continue its use but also recommend it to other people. The level of satisfaction stood at 81.2% of users while 81.7% resolved to continue using it. However, 44.4% agreed to facing problems when using MTN Mobile Money whiles 42.7% disagreed. This is an indication that there are some challenges that must be solved to sustain the satisfaction level of all users.

On the issue of token use, the findings showed that only few people use the token service hence most users who have never used the service failed to comment on its status.

The general assessment by merchants indicated that the MTN Mobile Money business is very profitable since 70.5% agreed to that and 82.9% said they are not considering stopping the business. However, only 54.3% of merchants were willing to recommend others to become merchants. This is quite low if compared to 91.5% of users who would recommend MTN Mobile Money to others. The low level of recommendation may be attributed to the fact that some merchants are not ready to create competition around them that will reduce their profitability.

Finally, 44.4% of merchants agreed that customers understand how the MTN Mobile Money works whereas 37.2% disagreed and 18.4% remained neutral. The relatively high disagreement can be attributed to the fact that most customers give their phones to the merchants to perform

the cash out service on their behalf. Merchants therefore have the notion that customers have average understanding of how the mobile money system works.

5.1.2 Challenges when using MTN Mobile Money

Respondents, both users and merchants were asked to rank and agree or disagree with specific challenges that hinder their use of the MTN Mobile Money service. A summary of their ratings is given below.

i. Network instability and unavailability

This was identified as the greatest challenge by both users and merchants.

When asked to rank challenges, a total of 71.3% of users ranked it within the high to highest bracket whiles 28.7% ranked it in the low to very low category. Cumulatively, 69.9% of merchants disagreed with the fact that they enjoy a stable network for their transactions and only 15.9% agreed that the network is stable for them.

When asked to state their own challenges, 71.1% of users and 60.5% of merchants listed network instability and unavailability as the challenges they encounter, confirming it as the greatest threat to MTN Mobile Money in Ghana.

ii. Reversal of wrong transactions

When asked to rank challenges, merchants found the ease of correcting wrong transactions as their greatest challenge with 54.1% strongly disagreeing that it is easy to correct wrong transactions. Cumulatively, 82.0% of merchants disagreed on this matter whereas only 13.3% agreed and 4.7% were not sure. When asked to state challenges, 18.5% of merchants and 6% of users listed reversal of wrong transactions as the challenges they encounter.

Thus, reversal of wrong transactions is the next highest challenge users and merchants face.

These two challenges received the greatest confirmation from both users and merchants but they also agreed to other stated challenges though at a relatively low rating.

iii. <u>Cash out limit</u>

A total of 44.3% of users ranked the cash out limit of GH¢1,000 per day in the high to highest challenge bracket while 4.8% listed cash out limit as part of the challenges they face. Users therefore want to use the service to withdraw as much as they can in a day.

iv. <u>Difficulty in obtaining electronic cash</u>

From the stated challenges, 59.3% of merchants largely agreed that it is easy to obtain electronic cash whereas 29.6% largely disagreed. However 6.7% of merchants listed difficulty in obtaining electronic cash as part of their challenges. This could be attributed to difficulty by some of the merchants to have access to the partner banks. Merchants located in towns that have no branches of the partner banks must travel to other towns where they can be found or develop their own ways of obtaining electronic cash for their transactions.

v. <u>Increasing number of merchants</u>

Some merchants were worried about the increasing number of merchants entering into the business. A total of 60.3% of merchants largely agreed that there are numerous merchants in their area, a situation that can cripple their business. Only 43.8% of users ranked the availability of merchants in the high to highest challenge bracket. The low ranking attests to the fact that there are numerous merchants entering into the business so most users do not find locating a merchant as a high challenge

Numerous merchants in the field will mean good business for MTN since the service will be available to users as and when they require it. However, merchants are not happy with the increasing trend since it has the potential of reducing their profitability. Therefore only 54.3% of them were willing to recommend others to become merchants.

vi. <u>PIN Security</u>

Impressively, the findings indicated that only 11.2% of users share their PIN with others whiles 88.8% do not share their PIN. Females were found to be more likely to share their PIN than males. Majority of users (80.7%) have never changed their PIN before which may be attributed to the fact that most users may not want to go through the hassle of having to memorise a new PIN every now and then. However, 30.3% of users ranked the likelihood of forgetting their PIN in the high to highest challenge bracket whereas 69.7% ranked it in the low to very low bracket. This low ranking can be attributed to the fact that most of the users never change their PIN so it will be very easy for them to recall it.

PIN changing is a security measure and must be done frequently. Even though 88.8% of users do not share their pin, the high number of users who do not change their PIN creates a security threat for users of MTN Mobile Money.

vii. <u>Customer‟s inability to operate the menu</u>

The findings showed that 82.6% of users agreed that they do not have any difficulty in using the MTN Mobile Money menu but merchants have the notion that customers have average understanding of how the mobile money system works. Only 44.4% of merchants agreed that customers understand how the menu works. This can be attributed to the fact that most customers give their phones to the merchants to perform the cash out service on their behalf.

viii. <u>High charges</u>

In listing their challenges, 7.2% of users and 5.9% of merchants listed high charges as part of their challenges. This however contradicts the earlier findings that both merchants and users agree that transaction charges are affordable. A total of 51.7% of merchants disagreed that

transaction charges are expensive and only 31.9% agreed whiles 62.4% of users agreed that the charges are affordable and 25.6% disagreed.

Therefore the researcher can conclude that high charges remain a challenge to some users and merchants based on the fact that 25.6% of users and 31.9% of merchants see transaction charges as expensive.

Users and merchants also listed some challenges that they face when using the MTN Mobile Money services which includes:

1. Robberies and fake currency.

2. Increase in fraudulent activities.

3. No instant message prompt when money is received.

4. No response when calling Customer Care for assistance.

5. Poor treatment by merchants.

6. Merchants do not have enough cash.

7. Long queues at merchant's location.
8. Inability to charge phones due to load shedding.

9. No instant message prompt after transaction leading to double transfer.

10. Commission payment problems.

11. Customers have no knowledge of the charges hence they complain when deductions are made.

5.1.3 Level of preference for MTN Mobile Money as compared to bank transaction ATM and e–ZWICH

The study showed that educated females with JHS (60.7%) or SHS (54.0%) level of education prefer to have only mobile money in their pocket. Males (65.7%) also prefer both cash and mobile money in their pocket than females (34.3%).

Most users (51.5%) would like to have only their mobile money wallet in their pocket. A substantial number (42.2%) want to have both mobile money and cash in their pocket. Only a minimal number (6.3%) want only cash in their pocket. Interestingly, people with no level of education never showed preference for having only cash in their pocket.

The findings also established that the older a person is, the more likely he or she is to own a bank account since the highest percentage of bank account owners (79.2%) were found to be between the ages of 31 to 40 years.

Majority of the users (67.6%) had bank accounts but without mobile money, the 32.4% of users who do not have bank accounts would have been denied access to financial services since they do not operate bank accounts. However the findings indicated that ownership of a bank account does not guarantee a visit to the bank since 52.5% of account owners visit the banks less frequently.

Users" preference for MTN Mobile Money over other forms of transaction was confirmed since 95.0% of users showed a preference for MTN Mobile Money. ATM preference ranked second (51.5% of users) followed by preference to make transactions in a bank (24.7% of users) and finally e-ZWICH use (11.8% of users).

The low preference for bank transactions confirms that owners of bank accounts do not frequently visit the bank but prefer to use MTN Mobile Money than to go to the bank. This shows that the MTN Mobile Money service has the potential of reducing frequent visits to the bank for transactions.

A negative correlation was discovered between MTN Mobile Money and ATM, e–ZWICH and bank transactions, though with weak variances. Since users have shown a relatively high preference for MTN Mobile Money, it can be concluded that they have low preference for ATM, e–ZWICH and bank transactions. Factors that may account for this include the fact that

the mobile phones and merchants are closer to the user than the ATMs, e–ZWICH POS and bank premises.

5.1.4 Proposed new services to be added to MTN Mobile Money

The research found new services that can be added to the current MTN Mobile Money services that will enable users to perform more cashless transactions. Such services, if are to be implemented, must be added to the payment of bills service on the mobile money menu. Suggested new services users want to be added are:

1. Pay for food, transport fares, airline tickets, fuel, school fees and water and hospital bills.

2. To pay national service personnels.

3. Use for international money transfer and send money to other networks.

4. For Online shopping, purchases in supermarkets, factories and big companies; as well as to buy things at the roadside and at the market place.

5. To make deposits into bank account.

6. Buy internet bundles.

5.2 Conclusion

Mobile money is a service that is gradually spreading across Africa. In Ghana, three MNOs (MTN, Airtel, TiGO) are currently offering this service and a fourth one (Vodafone) is preparing feverishly to launch their service. The prospects of using mobile money is high due to the high mobile penetration in Ghana. Mobile phone penetration as at February 2015 stood at 115.40%. The study assessed the current use of MTN Mobile Money and investigated the challenges that affect its use in Ghana.

The findings established that the greatest challenge to mobile money's survival is network instability and availability and the long delay of reversal of wrong transactions. Users also complained that the cash out limit of GH¢1,000 per day is too small and must be increased.

72

Merchants were also found to be highly exposed to robberies and fake currency since they receive a lot of cash from users. Users were found to use mobile money to mostly send and receive money which threatens to take away the deposit and withdrawal services offered by the banks. The study also established that MTN Mobile Money is a very viable business due to the high profitability confirmed by merchants but care must be taken not to saturate the market with numerous merchants. This can crowd out some merchants and kill their business.

On a whole, mobile money is still growing in Ghana and all efforts must be made to sustain it and add various services to make the economy more cashless and reduce the burden of printing new currency notes and minting coins every now and then. The study showed that services such as payment of national service personnels, hospital bills, fuel, airline ticket, food, transport fares and purchases in the market place, among others, can be added to the MTN Mobile Money services.

5.3 Recommendations

Based on the various findings in the study, the researcher recommends the following:

1. It is recommended that MTN put in strong measures to ensure that the network is always stable and available since one of the greatest challenge from users is network instability and unavailability.
2. In order to avoid the numerous wrong transactions, it is recommended that a confirmation displaying the name of the user/recipient must appear before any transaction is completed.
3. It is recommended that since users mostly use the mobile money to send and receive money, much education of users must be done, which should be focused on other services especially the payment of bills service.

4. It is recommended that merchants should be required to open accounts at the partner banks so that they deposit whatever money they collect in a day into the accounts to reduce their exposure to robberies. Also, this will make it easy for them to obtain electronic cash since transfer can easily be done from their regular accounts into their mobile money account without even visiting the branch.

5. Since some merchants find difficulty in obtaining electronic cash, it is recommended that MTN extends the partnership with banks to some Rural Banks and Licensed Microfinance Institutions to enhance easy access to electronic cash.

6. Since most users never change their PIN, it is recommended that MTN sends reminder prompts to users quarterly to encourage them to change their PIN. A system can even be created whereby the PIN will expire after a particular period (e.g. quarterly) and users will be forced to change it.

7. The study showed that most users are literates but some even have difficulty accessing the mobile money menu. Therefore it is recommended that the mobile money menu should be put in audio form, probably in some local languages so that users will find it easy navigating through it and the illiterates can also appreciate the service.

8. Since merchants have difficulty in contacting customer care for immediate assistance and reversals, it is recommended that MTN should create a separate unit to handle mobile money complains especially complains regarding reversals.

5.4 Recommendation for future research

For future research, it is recommended that a study of the mobile money services could be carried out using all MNOs that offer the service in the country so that a comparative analysis of their performance could be made.

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APPENDICES

Appendix 1: Questionnaire for users

QUESTIONNAIRE FOR USERS

Dear respondent, I wish to introduce myself to you as a Master of Business Administration (MBA) student of the School of Business, Kwame Nkrumah University of Science and Technology. As part of my program, I am required to write a thesis with the title „ASSESSING MTN MOBILE MONEY IN GHANA". As one of the mobile money users your opinion is very

important in my study. I would be most grateful if you could please spare some few minutes of your precious time to answer all the questions before you. You are assured that all the information provided will be used for academic purpose only and it will be treated with utmost confidentiality. I thank you in advance for your corporation.

<div align="center"><u>SECTION A</u></div>

1. Sex ☐ Male ☐ Female

2. Marital status ☐ Single ☐ Married ☐ Divorced

3. Age ☐ below 18 ☐ 18-25 ☐ ☐ 26-30 31-40 above 40

4. What is your level of education?

   ☐ Basic ☐ JHS ☐ SHS ☐ Tertiary ☐ None

<div align="center"><u>SECTION B</u></div>

5. Which mobile network do you use? (Please Tick all that apply)

   ☐ MTN ☐ Vodafone ☐ Airtel ☐ TiGO ☐ GLO Expresso

6. Do you have an MTN Mobile Money wallet? ☐ No ☐ Yes

7. How long have you been using MTN Mobile Money?

   ☐ Less than 1 year ☐ 1 – 2 years ☐ 3 – 4 years ☐ 5 – 6 years

8. Do you share your PIN with others? ☐ Yes No ☐

9. Which one would you prefer?

   ☐ Cash in your pocket ☐ Money in your Mobile wallet ☐ Both

10. Do you have a Bank account? ☐ Yes ☐ No

11. Please indicate your level of preference for each of the following transaction services

Transaction service	Most Preferred	Preferred	Undecided or neutral	Less Preferred	Least Preferred
ATM transaction					
MTN Mobile Money					
e-ZWICH					
Transaction inside a bank					

Please tick ONLY one option for the following questions

		Most Frequently	Frequently	Neutral/ not sure	Less Frequently	Never

12.	How often do you go to the bank?					
13.	How often do you use Mobile Money?					
14.	How often do you change your 4-digit PIN?					
15.	How often do you transfer money?					
16.	How often do you top up airtime?					
17.	How often do you cash out?					
18.	How often do you pay bills?					

		Strongly Disagree	Disagree	Neither Agree or Disagree	Agree	Strongly Agree
19.	MTN Mobile Money menu is easy to use					
20.	MTN Mobile Money charges are affordable					
21.	I believe my MTN Mobile Money wallet is safe and secured					
22.	Using a token is easy					
23.	I do not encounter any problem when accessing any mobile money service					
24.	I will recommend MTN Mobile Money to other people					
25.	I am very satisfied with the MTN Mobile Money services					
26.	I will always use MTN Mobile Money					
27.	I am considering stopping the use of MTN Mobile Money					
28.	I wish mobile money services had never been invented					

On a scale of 1 to 5 where 1 is the least challenge and 5 is the highest challenge, indicate the extent to which each of the following is a challenge to you when using MTN Mobile Money service.

	Challenge	1	2	3	4	5
29.	MTN network or service stability or availability for transaction to take place					
30.	The amount of money you can conveniently cash out from a merchant					
31.	The availability of a merchant close enough to your location at any point in time					
32.	Forgetting your PIN					

33.	Knowing how to use the menu					

34. Aside the challenges listed above, what other challenges do you encounter when using MTN Mobile Money?

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35. What other things do you want to use MTN Mobile Money to do?

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………………………………...
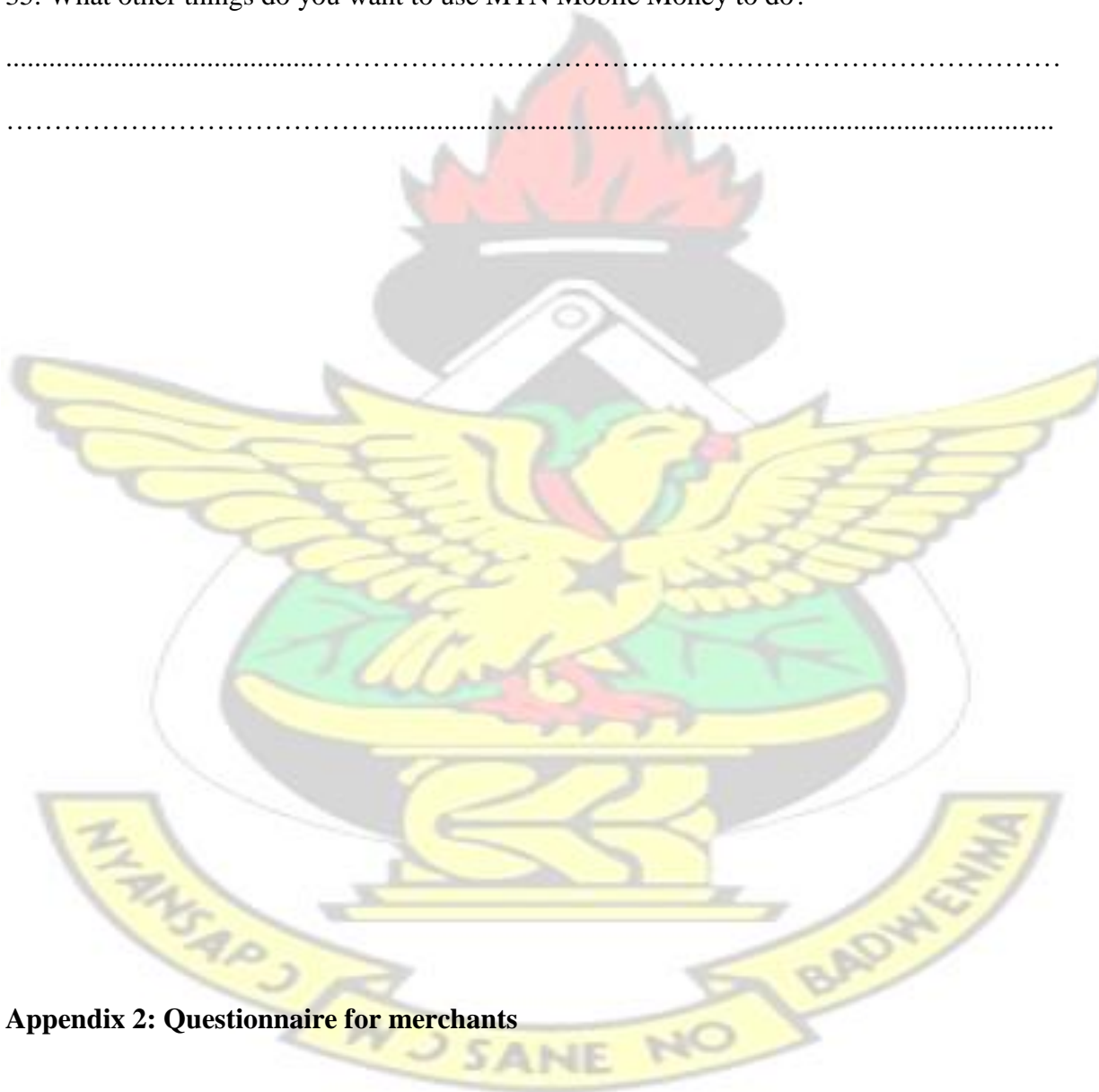
Appendix 2: Questionnaire for merchants

QUESTIONNAIRE FOR MERCHANTS

Dear respondent, I wish to introduce myself to you as a Master of Business Administration (MBA) student of the School of Business, Kwame Nkrumah University of Science and Technology. As part of my program, I am required to write a thesis with the title „ASSESSING MTN MOBILE MONEY IN GHANA". As a mobile money merchant, your opinion is very important in my study. I would be most grateful if you could please spare some few minutes of your precious time to answer all the questions before you. You are assured that all the information provided will be used for academic purpose only and it will be treated with utmost confidentiality. I thank you in advance for your corporation.

1. How long have you been an MTN Mobile Money merchant?

   ☐ Less than 1 year   ☐ 1 – 2 years   ☐ 3 – 4 years   ☐ 5 – 6 years

2. How often do you purchase electronic cash?

   ☐ Daily   ☐ Weekly   ☐ Bi-weekly   ☐ Monthly

   ☐ Other (Please specify)…………………………………..

3. How much electronic cash do you often purchase?

   ☐ Below GH¢1,000   ☐ GH¢1,000 – 2,000   ☐ Between GH¢2,000–5,000

   ☐ Other (Please specify)………………………………..

4. On the average, how many transactions do you make a day? ……………..

5. Please indicate the frequency with which your customers come to conduct these MTN Mobile Money services.

	Most Frequently	Frequently	Neutral/ not sure	Less Frequently	Never
Transfer money					
Top up airtime					
Cash out					
Pay bill					

Please indicate the extent to which you agree or disagree with each of the following statements

		Strongly Disagree	Disagree	Neither Agree or Disagree	Agree	Strongly Agree
6.	It is very easy for wrong transactions to be corrected					
7.	In my opinion MTN Mobile Money is very profitable					
8.	I easily get electronic cash to purchase					
9.	A lot of people patronize the mobile money service					
10.	I have a stable network for my transactions					
11.	The transaction charges are expensive					
12.	There are a lot of merchants competing with me in my area					
13.	Most of my customers use the token service					
14.	The money I collect from customers is safe with me					
15.	I will recommend others to become MTN Mobile Money merchants					
16.	My customers understand how the mobile money service works					
17.	My customers are satisfied with the MTN Mobile Money service					
18.	I am considering stopping the MTN Mobile Money business					

19. What challenges do you encounter as a Mobile Money merchant?

....……………………………………………………

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……………………………………………...

20.   What other things do you want to use MTN Mobile Money to do?

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……………………………...

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