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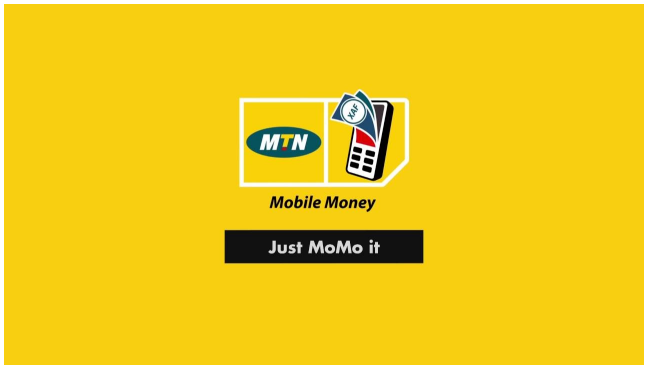
Msc in Social Sciences in Organizational
Innovation and Entrepreneurship

Master's Thesis

THE ADVENT OF MOBILE PAYMENTS IN DEVELOPING COUNTRIES: A CASE STUDY OF MTN GHANA MOBILE MONEY



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Frank Owusu
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DECLARATION

I hereby declare that this submission is my own work towards the Master of Science in Social Science in Organizational Innovation and Entrepreneurship 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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Notes

1. Northern Africa comprises of Algeria, Egypt, Ligya, Morroco, Sudan, Tunisia, and Western Sahara

2. Western Union releases information about their joint forces with Orascom to pilot Mobile Money Transfer Services http://ir.westernunion.com/news/archived-press-releases/press-release-details/2008/Western-Union-and-Orascom-Telecom-Join-Forces-to-Pilot-Mobile-Money-Transfer-Service/default.aspx#sthash.9APms4BV.dpuf

3.The five regions and the countries within each are elaborated on the website (http://unstats.un.org/unsd/methods/m49/m49regin.htm) .

4.See "Our value-added services and products http://www.mobicashonline.com/products/

5. See "Mi-Pay and Isys go live with safari-Mobile in Sudan http://www.wirelessfederation.com/news/14559-mi-pay-and-isys-go-live-with-saraf-mobile-in-sudan-and-roll-out-of-p2p-mobile-money-service-across-region

6. Egyptian banks provide mobile banking http://www.dailynewsegypt.com/2015/02/07/28-5-egyptian-banks-provide-mobile-banking/

7. Western Africa consists of Benin, Burkina Faso, Cabo Verde, Cote d'Ivoire, Gambia, Ghana, Guinea, Guinea-Bissau, Liberia, Mali, Mauritania, Niger, Nigeria, Saint Helena, Senegal, Sierra Leone, Togo

8. See https://www.mtn.com/en/Pages/default.aspx for overview of MTN products

9. Middle Africa encompasses Angola, Cameroon, Central African Republic, Chad, Congo, Democratic Republic of Congo, Equatorial Guinea, Gabon, Sao Tome and Principe

10. Eastern Africa comprises of Burundi, Comoros, Djibouti, Eritrea, Ethopia, Kenya, Madagascar, Malawi, Mauritius, Mayotte, Mayotte, Mozambique, Reunion, Rwanda, Seychelles, Somalia, South Sudan, Uganda, United Republic of Tanzania, Zambia, and Zimbabwe

11. South Africa comprises of Zambia, Swaziland, South Africa, Namibia, Lesotho, Malawi, Mozambique, Botswana, and Angola.

Abbreviations

MMS – Mobile Money Services

M-pay – Mobile Pay

MMM – MTN Mobile Money

MPMC – Mobile Payment Market Cooperation

MNOs – Mobile Network Operators

NCA – National Communication Authority

MMT – Mobile money Transfer

CGAP – Conservative Group to Assist the Poor

Keywords

Payment ecosystem

Primitive

Mobile pay

Advent

Business Model

Business Strategy

ABTRACT

The poor and primitive means of money transfers prevailing in the Ghanaian economy till the advent of mobile telephony companies and the subsequent introduction of mobile payment are indeed both odd and frightening. The status quo before then was the use of archaic mediums such as delivering by hand and via vehicles. It is of the need that an innovative model should be implemented to extend financial services to all especially to those in the hinterlands since this is a challenge in the country. The excitement around mobile payment has arisen in part because it is widely seen as an effective way to provide access to finance to millions of people around the globe.

The study examines and assesses the advent of mobile payment in the country by taking into reflection the value being created to users, the challenges hindering the successes of the innovation, the preference of mobile payment compared to other mode of transfers, and how stakeholders work together in the payment ecosystem. An interesting revelation of this study was the "flashback in the use of mobile pay" where users move back from mobile payment to the archaic ways of making money payments. It availed that respondents mainly engaged in the use of "transport", "through someone", "delivery services", and "bank" in making various payments prior to the advent of mobile payment. Some users complained about the cost of making various transactions on MMS. The penultimate indicator of the challenges revealed in this study was the network instability. The theoretical and practical implications of business model, business strategy and payment ecosystem related to mobile payments were discussed. It was also revealed that users prefer to use MMS as compared to other mode of payments. The data was analysed using the Statistical Package for the Social Sciences (SPSS) to ascertain the relationship between constructs. It is of the recommendation that MTN Ghana should put in much efforts to make their network stable for various transactions as the successes of MMMS is greatly linked to the success of the network. However, the results were in support of some key elements of business model, business strategy, payment ecosystem and shows that there is an array of hope in this innovation, if challenges and other concerns are being dealt with a sense of urgency and seriousness.

CHAPTER 1

INTRODUCTION

1.1 Background of the study

There is a swift rise in growth of mobile technology throughout the globe (Tobbin, 2010). Also, Hariris et al., (2012) indicated that, mobile telephony has enjoyed phenomenal adoption rates across most of Africa for almost the last decade. Mobile technology has been adopted by a whole lot of people especially those in the hinterlands. It is quite interesting to note that children even at the age of 7 use a mobile phone in developed countries. All categories of people in the society now have access to financial services as people become increasingly familiar with mobile-money system.

Mobile technology has become ubiquitous services, which has seen the espousal of it worldwide, especially among the impecunious (Cernev et al. 2011). When people who lacked access to financial services get hold of phones, what come into mind is mobile money, mobile payment and mobile banking. This serves as a means of financial inclusion (Cernev et al. 2011). In a survey published by GSMA which was titled "2011 Global Mobile Money Adoption Survey", a distinctive detailed analysis was provided by the association on the global customer adoption of mobile money services. The data asserts that in early 2009, there was only 17 mobile money service deployments existed, nonetheless as of April 2012, the number has increased to 123 and with 93 set further to be launched. It was noted that, in 2009 a reckoned 45 million unbanked citizens employ mobile money services (MMS) and this was set to rise to as many as 360 million by the end of 2012 (Davidson & Pénicaud 2011). This proves that there is hope in mobile money services (MMS) as it serves as a means of financial inclusion.

Financial systems everywhere cannot be discounted in any way, as they are a part and parcel of the daily activities of the ordinary individual as well as entrepreneurs regarding making and receiving payments now and then. The financial system perspective, in contrast, has shifted the terms away from individual firms onto institutions and their ability to provide services on a sustainable and widespread basis (Rhyne & Otero 1992). In shifting focus, the financial systems approach necessarily relaxes its attention to impact in terms of measurable enterprise growth, and focuses instead on measures on increased access to financial services (Rhyne & Otero 1992).

Although the growth in the financial services in Africa with emphasis on money transfers has been breathtaking over the last decade or two, fueled primarily by the introduction of services such as Western Union money transfer, Moneygram, Vigo and the like, generally, money transfers in Africa continue to border or hinge on the primitive, especially in rural and peri-urban areas of the continent. In large swathes of the continent, the main ways of sending and receiving money has been by hand even over long distances! Much has been documented about how Africans travel over long distances to hand over money and other valuables to relatives and loved ones or even to make

payments. Where one cannot personally take the long haul to transact such activities, relatives are often sent or monies are given to transport operators to deliver. The problems arising out of loss or thievery of such monies, which sometimes occur, can only be imagined!

Africa's financial system is indeed, very poorly developed and nowhere near the developed and stress-free system of the developed world. Indeed, a report by World Bank (2011) on financial services in Africa points out clearly that with the exception of a handful of developed financial markets, many other African countries' financial markets are still in their infancy (Honohan & Beck, 2007). With exception of South Africa, which had a developed and well-regulated banking system which can be compared favourably with those of industralised countries; South Africa has had a lot of interest from abroad with number of foreign banks establishing presence in the country and others acquiring stakes in major banks (The Banking Association, South Africa, July 2014). Over the years, Africa, especially the sub-saharan countries, has gone through rough times in financial services especially with the widespread collapse of many micro-finance institutions as result of their inability to fulfill stringent requirements of the Bank of Ghana (Ghana Business News, 2013), and others too as a resort of capitalization (The Herald, 2016). This has scuttled the attempt to innovate and/or expand the weak financial system of the continent through a different medium to modernize and promote money transfers in the continent. The emergence and spread of mobile telephony companies in various sub-saharan countries over the last decade or two has seen the introduction of several services which include quasi-financial services such as mobile money transfer (MMT) systems which have gone a long way to help promote efficient and modern money transfer system within the countries.

There have been payment innovations that fundamentally have changed the ways we pay and send money (Holst et al., 2015). The introduction of mobile payment is one of many innovations that are changing the payment market in the world (Hedman & Henningsson, 2015) and Africa is no exception. This change necessitates new payment service providers infiltrating this profitable market (Hedman & Henningsson, 2015). Payments have become a searing blot for digital innovation (McKinsey, 2014). Mobile phone manufactures, telecom operators, payment service providers, software companies, and technology start-ups all are gaining access into the payment market (Gartner 2014). Payments have become one of the public's most innovative and efficacious precinct, with powerful technology-based competition for market spot due to digital convergence with mobile technologies (Ondrus & Lyytinen 2011).

1.2 Ghana's primitive financial services

This part introduces the primitive ways Ghanaians used in making and receiving money. This has been captured in this chapter because Ghana is the researcher's study area. Therefore, it is important to talk about the arcade ways of sending and receiving money before the advent of mobile money in the country.

The poor and primitive means of money transfers prevailing in the Ghanaian economy till the advent of mobile telephony companies and the subsequent introduction of mobile payment (known mostly to Ghanaians as mobile money transfer) are indeed both odd and frightening. The status quo before then was the use of archaic mediums such as delivering by hand and delivering via vehicles. Most emerging economies have a great number of households that depend on domestic remittance (Tobbin 2010) and Ghana is of no exception. Before the advancement of mobile money there use to be the traditional way of remitting money. For instance, "The main methods of remittance in Ghana have been through the "Bus Driver". People visits the bus station of the village or town that their families are based and with a little incentive plead with the bus driver to send their remittances for them. If accepted by the bus driver, the remittance gets to the family within hours. Other informal methods were that using visiting family and friends, or travelling long distances to remit the funds whenever necessary. Thefts, armed robbery and accidents are a few of the challenges with these methods of remittance" (Tobbin 2010, p 2). Bank transfers, though been present for years, have been largely untapped as a medium of transfers especially for the wider community most of whom remain unbanked! (Ng'weno, 2015). Innovation of the mobile money is set to rescue Ghana from this especially with regards to payment.

For several years now, Ghanaians have found it difficult to save and make payments especially at banks due mainly to the complex system of banking replete with long queues, excessive documentations and delays of all sorts. For majority of the populace who are largely traders and farmers, such a medium has remained unattractive to them. Thus, money transfers through the traditional banking system has not been taken advantage of to the level that could be deemed efficient and pervasive. Moreover, the introduction of credit and debit cards has not helped, as it has not been widely embraced in the system at all. In fact, very few people mostly wealthy businessmen use credit cards in Ghana. Also, the high incidence of credit card frauds has frightened many from adopting this medium of sending and receiving money from relatives, friends and business partners. This has perpetuated a massive use of primitive means of the money transfers. This situation, till the advent of mobile money transfers, was dire indeed, to say the least.

The whole continent of Africa has payment and receipt of money problems that are not dissimilar in depth, content and form. However, the choice of Ghana is primarily buoyed by the fact that virtually the entire populace in the country resorts to the use of mobile money transactions for their effective payments daily.

1.3 Statement of the problem

It is of the need that an innovative model should be implemented to extend financial services to the poor since this is a challenge in the country. The excitement around mobile money has arisen in part because it is widely seen as an effective way to provide access to finance to millions of people around the globe. "According to the

Consultative Group to Assist the Poor (CGAP), roughly 1 billion people have a mobile phone but no bank account. Providing them access to mobile financial services will involve difficult implementation that is unlikely to succeed quickly. In addition to extending financial services to the poor, mobile money is expected to improve productivity by increasing the efficiency and lowering the cost of transactions, improving security, generating new employment opportunities, and creating a platform on which other businesses can grow" (Donovan 2012, p. 62). Also, it has 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. Therefore, the researcher intends to investigate into this to identify the role of Mobile Money in Ghana as Ghana drives towards a cashless economy. The question is how far has this been implemented? The researcher intends to find out this from one of the mobile network operations in the country (i.e. MTN Ghana).

Again, studies have revealed that network challenges can make withdrawals difficult (Myjoyonline.com, 2014). Most of the citizens in the country complain of network failure, which makes them distrust the use of mobile money for payments. The challenges mobile phone users face with respect to network connectivity have come up on several discussions on conferences (eg. Kevor and Amakwa, 2013). It was noted that mobile network operators (MNOs) were quite unwilling to train retailers because they felt that retailers were not under any commitment to serve their interest but rather have every incentive to switch to represent rival companies. This element seems to be a paramount setback for mobile money uptake in Ghana. Most of the retailers who have been engaged in an interview were either dispassionate in mobile money services or were completely unknowledgeable about the benefits of the product (Owusu-Agyemang et al, 2014). To add up to this, there seems to be some form of negative consequences arising now in the use of Mobile money services in the country as there have been a lot of deductions on making payments, withdrawing money, and even depositing money into one's own account by the telecom companies. Most people have started withdrawing from the use of the mobile money service and moving back to the traditional old ways of payment and receiving of money, which has been term by the researcher as "Flashbacks in the use of Mobile Pay". This is interested to study since it keeps some users away from the service leading to a stoppage of it and moving back to the archaic ways of sending money. The researcher has therefore decided to investigate into the mobile money transfers or mobile payment in Accra, and identify the causes of flashbacks in Mobile pay.

In a nutshell, this research seeks to ascertain how successful is the mobile money service since its advent in the country looking at it from the users' perspective and the management of MTN.

1.4 General Objective

- To examine and assess the advent of mobile payment in Ghana.

1.4.1 Specific Objectives

- To determine the primitive means of money transfers in Ghana prior to the advent of mobile money transfers
- To assess and examine the current state of use of MTN mobile payment in Ghana.
- To examine the effectiveness of the mobile money initiative in facilitating smooth, efficient and effective cashless means of mobile payments in the country.
- To identify values and the causes of negative flashbacks on the users of Mobile payment.
- To probe into the challenges affecting users in the use of MTN Mobile payment in Ghana.

1.4.2 Research questions

1. How do users of mobile pay in the city of Accra use MTN Mobile money?
2. Has the adoption or the advent of Mobile Pay created any value for the users?
3. How innovative is MTN in staying on top of Mobile Payment System in Ghana?
4. What are the various challenges currently affecting the use of Mobile payment?
5. What causes flashbacks in the use of mobile pay?

1.4.2.1 Sub Research questions

1. How satisfied or dissatisfied is it in using mobile payment?
2. How convenient or inconvenient is it in using mobile payment?
3. Is there any benefit derived in using mobile pay?
4. Why users do not use the bank for their various mode of payments?

1.5 Justifications

The study topic is greatly justified for several reasons. First, there were many dissensions against the revolution of mobile money in the country and the recent flashbacks occurring in mobile pay is another thing that needs to be researched into. For one thing, while several laymen believed in avoiding the ignominy of network delays, others argued against joining it, as they are averse to change. Another rationale for the study is that several solutions used in the past in tackling the problem of payments in the country have not been the best. The study will therefore focus on whether there is any ray of hope in the initiative that is mobile money and to see if indeed there is hope in the initiative in the country.

Furthermore, this service is supposed to help towards achieving a cashless economy. There are various forms of cashless transactions in Ghana including cheques, credit or debit cards, fuel cards, e–ZWICH and mobile money. Debit cards are the widely used of these forms, especially on ATMs. Therefore, 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. There is the need therefore

to assess the current state of use of MTN mobile money. The study also provides the banks with some reasons why users have not been using their institution for various mode of payments.

Finally, comprehensive studies in Ghana, Africa, concerning the effects of mobile money have been few but there seems to be none or little on the flashbacks in mobile pay as well as assessing the current state use of MTN mobile money. The study will attempt to fill in some gaps as far as possible.

1.6 Theory to use

A lot of theories could be considered for this project but my main concern will be on the payment ecosystem, business model (the cost and value), and business strategy. These are necessary to use as it throws light on my research questions or the study.

1.7 Organization of the work

This study will have seven chapters. Chapter 1 has already been talked about in this chapter and it outlies the background of the study, Ghana's primitive financial services, statement of the problem, general objective, specific objectives, research questions, justification of the study and organization of the study

Chapter 2 discusses the advent of mobile payments or mobile banking in developing countries (to be precise the African context).

Chapter 3 discusses literatures that are related to the study topic like Business Model, Business Strategy and payment ecosystem. These have well been elaborated in the chapter.

Chapter 4 adds to the literature reviewed in Chapter 3. This chapter reviews publications and literatures on the Mobile payment in Ghana, the evolution and adoption of mobile payment with a clear focus on the pioneers of the initiative, other players as well as its reach over the last decade or so. It finally touched on the cashless economy, challenges and concerns in using mobile money service.

Chapter five deals with the methodology used in gathering data and in analyzing the data. Limitations for the study were also discussed here. The demographics of the respondents engaged in answering the questionnaire for the study were also talked about in this chapter.

Chapter 6 discusses data collected and explain possible causes of the discoveries made. Again, it will elaborate on the findings and analysis by discussing what was gathered on the field. Particularly, it will investigate the effectiveness of mobile pay over the previous mode of transaction handling of money.

Finally, *Chapter 7* gives the summary of the major findings, conclusions and then offer recommendations. It lays a solid foundation for future research work on the topic.

CHAPTER 2

THE ADVENT OF MOBILE PAYMENTS IN DEVELOPING COUNTRIES

2.1 Introduction

In this section, the researcher explores the advent of mobile payments in developing countries especially the African context. To be able to ascertain the availability of mobile payment and the services that are bestow in Africa, a contrast is made between the five largest regions in Africa; namely southern, middle, eastern, western, and northern3. To begin with, discussions are made on the payment pattern which are used within each region. The fast-increasing popularity of mobile payment relies on the migration pattern seen around the globe, and the quintessential needs to send money to their family members back home (Siegel & Fransen, 2013). The trends within mobile payments are described, which includes the services that the various types of providers' proffer. Following this will be to analyze the degree to which the service providers target remittance senders and how the services provided meet the needs of the remittance senders in each of the regions (Siegel & Fransen, 2013). Lastly, there will be a conclusion to end the whole chapter and introduce what is next in following chapter. There are a lot of opportunities for mobile remittance and between the services offered by mobile payments in each of the five regions. Mobile banking or mobile payment has played specifically transformative role in each of the regions, which helps extends access to mobile transfers to the unbanked (Siegel & Fransen, 2013). This chapter considers mobile payments by some banks and applications in Africa and this was done to get the overview of how mobile payments are done within Africa.

2.2 Mobile payments in Northern Africa[1]

Mobile payments or mobile banking services are available in some countries in Northern Africa except for Libya and Western Sahara (Siegel & Fransen, 2013) (For overview, see table 6.0 in appendix 6). Many of the services providers over there are on the verge of expanding to other countries, and also user levels of mobile phones have increased massively in some parts of northern African countries like Morroco and Tunisia over the past few years (Siegel & Fransen, 2013). For instance, in Tunisia there was a rise from 10% in mobile phone penetration in 2002 to 60% of mobile phone penetration in 2005 (Bhavnani, Chiu, Janakiram, & Silarszky, 2008).

In Algeria, Orascom, a telecom company which operates in the Middle East, Africa and Asia, joined forces with Western Union to introduce mobile remittance services in selected markets. This service is aim to make low-principal, high-frequency remittances more convenient to the millions of consumers who send money every day[2]. Orascom telecom was established in 1998 operating six mobile networks with approximate total of 77 million subscribers, which includes Telecel Zimbabwe in Zimbabwe, Banglalink in Bangladesh, Tusiana in Tunisia, Mobinil in Eygpt, and Djezzy in Algeria[2]. To add up to the previous statement, Orascom started operations also

for mobile services in North Korea as it acquired the license[2].

Regarding Sudan, a mobile payment service Saraf-Mobile was put into place in 2009, and this was a joint initiative by Mi-pay, a mobile payment service provider based in the UK, and Isys, a financial institution and financial service provider for MNOs in Kuwait[5]. Transfers and mobile phone payments are done internally between both individuals and companies[1]. If this becomes a success, Saraf-Mobile plans to extend to different 22 countries in the Middle East and North Africa (Siegel & Fransen, 2013).

In Morroco, Mobicash was launched in 2010 by Maroc Telecom, offering mobile phone payments and money transfers. Mobicash has an agreemenet between the Central Banque Popularie and Attijarariwafa in Morroco (Siegel & Fransen, 2013). The services offered by Mobicash includes but not limited to, MobiRemit (Domestic and international remittance), MobiWatt (Electricity Bill payment), MobiBills (TV, Bill payments)[4]. Mobicash offers services to individuals, small and large business and as well as making transfers internationally.

In Eygpt, most of the banks have launched mobile "banking applications" services to their customers allowing them to transfer funds and check their bank balance. Approximately 10 banks representing 28.5% out of the total 35 operating in the country offer mobile banking services[6]. These include HSBC Arab Investment Bank (AIB), United Bank, Commercial International Bank (CIB), HSBC, Arab Bank, HSBC, Citi Bank, National Bank of Egypt (NBE), Arab African International Bank (AAIB), and Bank Misr[6].

2.3 Mobile payments in Western Africa[7]

Mobile payment services in the western Africa has been elaborated in Table 7 of appendix 7. As indicated in the table, a lot of the countries found here utilize mobile payment services. For example, Ghana, Cote d'Ivoire, Senegal, Nigeria. MTN Ghana pioneered mobile money transfer (MMT) in Ghana in 2009, and this has attracted other actors to join into the market (Siegel & Fransen, 2013). For example, tigo has introduced tigoCash, Vodafone has also introduced Vodafone mobile money, airtel telecom has also introduced airtel money, AfricXpress has brought forth txtnpay, this is a system for checking bank balances, buying prepaid airtime, paying bills, sending money and paying electronically for goods and services. Another payment service is offered by eTranzact, while most banks are now enabling client access to their bank accounts through mobile phones (eg. United Bank for Africa UBA) (Siegel & Fransen, 2013). Mazzuma app has also been launched this year to help various subscribers to send money to all networks (MNOs) and not a specific mobile network provider one is affiliated to.

In Senegal, Cote d'Ivoire, Niger, and Mali, Orange Money is operating in the mobile money industry. The services offered by them include cash withdrawals, cash deposits, mobile payments, mobile money transfers (Siegel & Fransen, 2013). Siegel and Fransen, (2013) reports that people who are not registered users can receive money

transfers and thus the focus is on both individual and business users. In Nigeria, possibilities of launching a trial of mobile banking services are being explored by mobile banking providers (Siegel & Fransen, 2013). They went on to give an example which is the GoMobile mobile banking, and Western Union Money transfers via mobile phones.

2.4 Mobile payments in Middle Africa[9]

This part of Africa is underdeveloped with respect to the mobile payment industry (Siegel & Fransen, 2013). CelPay, which is based in South Africa, has started mobile phone payment system in Congo (Siegel & Fransen, 2013). Money transfers, mobile payments, cash deposits are the services offered by Celpay to Congo focusing on both businesses and individuals. Unfortunately, customers need to have a bank account before they can make transfers nationally. Thus, they are not making efforts to reach those who do not have bank accounts or who cannot open a bank account due reasons best known to them. MTN has launched mobile money transfers in Cameroon and as usual available nationally and only to MTN subscribers. See appendix 8 for an overview (Table 8.0).

2.5 Mobile Payments in Eastern Africa[10]

The mobile payment business in Eastern Africa is booming (Siegel & Fransen, 2013). Siegel and Fransen (2013) posits that countries have seen keen increases in mobile payment services in recent years, which includes making person-to-person transfers. M-Pesa is the leading company in the eastern Africa in the Mobile money industry and which is also one of the only companies in the world offering services in international money transfers. However, other companies such as MTN mobile money, originally located in South Africa, has extended their markets to the eastern African region. See table 9.0 at appendix 9 for an overview. Kenya is one of the few countries in the world in which a successful international money transfer service was incorporated.

M-Pesa was launched in 2007 and which was a joint initiative by Safaricom, the leading mobile phone provider in Kenya, and Vodafone. M-PESA was focus mainly on providing low-cost person-to-to-person money transfers (Siegel & Fransen, 2013). They asserted that the services offered included person-to-person money transfers, cash deposits, and cash withdrawals. M-Pesa, in 2009, extended its services to the UK which made it possible for customers to make international money transfers between the UK and Kenya; Currently, Safaricom has over 13 million customers using M-Pesa (Mohapatra, 2011). M-PESA is considered an important example of an international mobile money transfer service, and its success clearly shows the need for these services (Siegel & Fransen, 2013). According to Siegel and Fransen (2013), M-PESA is mainly popular because it offers highly accessible, cheap and fast services. No bank account is needed to make use of the MPesa service but "Safaricom is currently exploring possibilities to partner with banks such as Equity Bank" (Siegel & Fransen, 2013, p. 431). There are at least five key competitors to M-PESA: Hello Money (Barclays), Orange Money, Airtel Money (which

replaced Zain after the acquisition by Bharti Airtel), yuCash by Obopay (Mondato, 2010). There is an African proverb that says, "Two heads are better than one". In the context of the study what the researcher is trying to say is if the telecom companies work together like joining forces with each other and serving the same market (i.e. the mobile money services); mobile money service will thrive to the level is expected to be. This can be witnessed with M-PESA as two companies joined forces together to make the initiative a success.

MTN Mobile Money is a joint initiative of the mobile phone company MTN Group and Standard Bank in South Africa, which launched their project in 2005. MTN Mobile Money was launched in Uganda in 2009 and works with the Stanbic Bank. In Rwanda MTN Mobile Money was incorporated in close cooperation with the National Bank of Rwanda in February 2010 and the number of users is increasing rapidly (Siegel & Fransen, 2013). MTN Mobile Money advertises its mobile money as a "convenient, secure, and affordable way of sending money", and focuses specifically on money transfers within countries[8]. The objective is to target areas which currently have a high proportion of unbanked people. The services offered are cash deposits, cash withdrawals and money transfers. Customers can send and receive money to Kenya from Rwanda and vice versa through Safaricom or M-PESA. MTN partners with local banks, but no bank account is required to use the mobile money service. MTN services are not just available to registered MTN customers; people who are not registered can also receive money through authorized MTN Mobile Money agents. This way people that do not have an MTN subscription can still receive money from their families or friends. The fee for non-registered customers are always higher as compared to those registered (Okwii, 2015).

In Somalia, the three providers of mobile payment were reportedly forced to shut down by militant groups called Al-shabab. Al-shabab claims that the mobile phone banking could expose Somalia to interference by Western countries through the international partners of the Somali telecommunications firms (BBC, 2010). This is such an unfortunate issue which should not be allowed to persist and continue within developing countries.

2.6 Mobile payments in southern Africa[11]

Some Southern African parts have experienced popularity in mobile banking (See table 10 in appendix 10). Presently, countries like Zambia and South Africa have mobile payments service providers that offer mobile remittance (World Bank, 2009). Siegel and Fransen (2013) asserts that banks have shown additive models of mobile banking, in which current customers can add mobile banking to the banking services offered them. They elaborated with an example; First National Bank (FNB) in Botswana, originally settled in South Africa.

In the Sub-saharan Africa, Botswana has shown to be one of the highest user rates of mobile phones (Porteous, 2007) and thus notably considered a favourable market for mobile banking (Siegel & Fransen, 2013). The first to start mobile banking projects in the country was FNB and presently expanding its services to other countries like

Swaziland, Lesotho, Botswana, Namibia, and Zambia. Stanbic and Barclays and other banks are currently following FNB lead (Siegel & Fransen, 2013). Customers have the chance to make third-party payments between customers, transfer money between accounts, and check balances. One needs to have a registered bank account to be able to access the benefits it comes with using FNB and the services are limited to its own customers.

The two companies offering mobile money services in South Africa are MTN Mobile Money and WIZZIT (Siegel & Fransen, 2013) but in September 2016 MTN South Africa announced cancellation of its mobile money service "due to lack of commercial viability" (Chutel, 2016). Though the two companies are joint initiatives of a bank and are "alliance banking models", that can be either a mobile phone company or another company (Porteous, 2007). Bank of Athens of South Africa is linked with WIZZIT and thus focuses primarily on mobile banking services such as money transfers. CGAP (2006) posits that WIZZIT focuses on individuals that are on low income and lacks or have low access to formal financial services in the country. The good thing with this is that they focus on the low income or the low access to financial services in the country. A registered member of WIZZIT is around one-third of the price of owning a bank account (CGAP, 2006). There is no minimum required balance to be able to access or use WIZZIT. Customers pay accordingly for the services they use as at that moment but they are not charge for a fixed amount any month. Non-withstanding the fact, a small fee is charge for one to become a member. Customers can also buy airtime for their mobile networks and buy prepaid electricity (CGAP, 2006). WIZZIT is connected to other banks in South Africa and offers internet banking. Also, a customer can send money to any mobile phone user; transfers are not limited to subscribers of WIZZIT (CGAP). Transferring money internationally is not possible.

MTN centres on offering widely accessible money transfer services in South Africa, as well as in other countries (elaborated above in previous sections). The services offered includes but not limited to buying goods at selected companies, cash withdrawals, cash deposits. Nednak, Standard Bank, and Absa are the banks MTN Mobile Money is presently connected with (Siegel & Fransen, 2013). MTN Money transfers can only be done to other MTN subscribers and no international money-transfer services are offered by MTN (World Bank, 2009).

In Zambia, Mobile Transactions Zambia Ltd (MTZL) and CelPay provide mobile services to person-to-person transfers. MTZL is an independent banking model, whereas CelPay is an alliance banking model. When compared to mobile banking providers in South Africa, MTZL and CelPay both have a very strong focus on the small businesses market in addition to the services they provide to customers (Siegel & Fransen, 2013). CelPay was an initiative by the South African Rand Bank incorporated in 2002, and considered one of the first African mobile banking providers (Siegel & Fransen, 2013). Services offered by CelPay in Zambia ranges from purchasing goods at selected retailers, cash withdrawals, to cash deposits. CelPay offers person-to-person transfers, consumer-to-

business (C2B) and business-to-business (B2B) payment services and focuses primarily on both consumers and businesses. Customers need to have a bank account and money transfers are made nationally.

MTZL is a joint initiative by CAD International Limited and the Dunavant Cotton Company in Zambia, an investment holding company in South Africa which specifically focuses on transaction services and payment. MTZL focuses mainly on financial transaction services and payment services for individuals and small businesses. They offer town transfers, transaction services, and payment systems. MTZL has cheap services for payment systems for urban-to-rural remittance sending, and small businesses owners (Siegel & Fransen, 2013). International money transfer is not available. No account is needed for MTZL; customers need to have a sim-card and a mobile phone.

2.7 Conclusion

There is indeed a fast growing trend in the mobile banking industry and this has been considered as a very important tool to offer financial access to the unbanked and the poor (Siegel & Fransen, 2013). The usage and ownership of mobile phones have increased rapidly in African (World Bank, 2010) and as a consequence, mobile banking services become more popular (Siegel & Fransen, 2013). It can also be seen that most of the service providers provide the services to the subscribers and some others request the use of bank account to access this service. This type of service provision is much more additive than transformative (Siegel & Fransen, 2013).

Again, transferring money within national borders are often possible but transfers internationally are limited across the continent. The financial regulations of many countries usually impede international mobile money transfers, thereby severely limiting the prospective of mobile remittance sending (Siegel & Fransen, 2013). If countries could allow the regulatory framework of the countries to become adaptable and takes account of mobile payments internationally; the money transfer industry would and could become very efficient and competitive. However, the Eastern African region shows how mobile banking can be used in facilitating a smooth remittance sending (Siegel & Fransen, 2013). For instance, M-PESA initiative in Kenya opened a pathway sending money between Kenya and the UK. The other African countries could try to implement such services.

The next Chapter is the theory. It reviews various literatures on topics related to the study, that is, Business Model, Business strategy and payment ecosystem were reviewed. With the business model, the study considers the value and cost structure of the case company.

CHAPTER 3

LITERATURE REVIEW

3.1 Introduction

This part of the thesis reviews literatures on the various topics (business strategy, business model, and payment ecosystem) in relation to the topic being researched into. This Chapter consists of three main topics where additional sub topics can be found beneath all or some of them. I will address them systematically in that order (business strategy, business model, and payment ecosystem).

3.2 Business and marketing Strategy

This section reviews literatures on business strategy and marketing strategy. It also considers literatures on prices and promotions as a key factor in the successes of mobile payments.

3.2.1 Business Strategy

Business strategy is concerned with how businesses achieve competitive advantage (Slater & Olson 2001). With this, it can be said that every business operates with a business and a marketing strategy that help them achieve an advantageous position within the market they operate. The two dominant frameworks of business strategy that have emerged are the typologies of Miles and Snow (1978) and Porter (1980). There are other ones, which have evolved, but would like to adapt to these two for the sake of the research. Miles and Snow (1978) reported a comprehensive framework that addresses the alternative ways in which organizations define and approach their product market domains, which is classify as the entrepreneurial problem, and construct structures and processes, which is also seen as the administrative and technical problems, to achieve success in those domains.

Porter (1980) proposed that the entrepreneurial problem should be viewed as a product of how the firm creates value, that is the differentiation or low cost, and how it defines its scope of market coverage, which focuses on focused or market wide. These typologies, which are differentiation and low cost, of entrepreneurial behavior, that was identified by Porter (1980), were synthesized by Walker and Ruekert (1987) by discriminating between Low Cost defenders and Differentiated Defenders (Walker & Ruekert, 1987). Slater and Olson (2001) also made use of this distinction and considered how marketing strategy contributes to the successful execution of four proactive business strategy types (i.e., Prospectors, Analyzers, Differentiated Defenders, and Low Cost Defenders) (Slater & Olson 2001). These factors help businesses to achieve success in their operations. These factors when considered within the mobile payment would benefit the users of mobile payment and the MNOs.

It can be seen above that as Miles and Snow (1978) resorts to providing a product to fit the problems of the market and prepare strategies to market them. Porter tries to elaborate how a company can differentiate its product (even

though is a product to fit the problem of the market) to what is already on the market. There can be associated problems when one begins to use any of their approach. With the first one, a product is produced based on the entrepreneurial problem which may already would have been solved by other companies or organization, thus making the firm to be in the same pool with the same products on the market. This will surely reflect in negative sales as well as negative consequences. The latter one is quite advantageous when it comes to this research; there are a lot of mobile payments (telecom companies) in each country but how one can differentiate itself on the market will attract a lot of customers. This is exactly the point in Ghana as we have more than four telecom companies in the country so organization needs to strategize to differentiate itself from the other ones. Having your business strategy at hand there is also the need to have a marketing strategy there to help in smoothing activities at the market or to show a way to approach the market. Thus, it is important to review theories on marketing strategy as it goes in hand with business strategy

3.2.2 Marketing Strategy

Marketing Strategy is the set of integrated decisions and actions (Day, 1990) by which a business expects to attain its marketing objectives and meet the value demands of its customers (Cravens, 1999). Not forgetting that marketing strategy is concerned with decisions which relates to the market segmentation and targeting, and the development of positioning strategy based on a product price, distribution, and promotion decisions (Hunt & Morgan, 1995).

Market targeting decisions are underlie by market research and segmentation of the market. Market targeting entails some major commitments to satisfying the needs of specific customer groups through the development of specific capabilities and investment in dedicated resources (Kotler, 1994). The most important decisions taken by business with regards to how big should the product line be. Certain questions are posed to the management like should the product line be narrowly focused or sufficiently broad to cater for a set of complementary products, differentiate performance specifications, or different points (Corey, 1991). Some related issues with regards to how the product line should be are the innovativeness of the products in the product line (Kerin et al. 1992), their relative customer perceived quality (Jacobsen and Aaker, 1987), and customer service (Zeithaml et al. 1996). Levitt (1980) also perceived service to be an element in the expanded product concept. Let's now elaborate on prices and promotion as a factor of marketing strategy

3.2.2.1 Prices

Prices are considered when setting up a marketing strategy. Companies take a lot of time in setting prices but there seems to always be a problem. The prices may end up targeting the wrong customers making sales very difficult to come by. There is always a fundamental issue in pricing that is whether or not a firm should charge a premium

price (Slater & Olson 2001). In this regard, premium prices refer to the prices, which are set on a product before going out to the market. Premium prices may be justified based on innovativeness (Kerin et al., 1992), superior product or service quality (Zeithaml et al., 1996), or brand equity (eg., Keller & Aaker, 1992). On the other hand, lower prices may be justified when market share or sales growth is the objective or when the firm's product is somehow disadvantaged (Slater & Olson 2001). Some firms prefer having their product on the low cost. The researcher considers the transaction cost as the price of the products (transactions) in this paper. Most telecom companies enter the market with having low cost for transactions and this is how they position themselves in getting a great number of customers or percentage of the market. However, users of MTN mobile money seems not to well appreciate the prices or cost of various transactions as they believe that the cost is too much.

3.2.2.2 Promotion

Promotion is another factor considered when setting up a strategy for the market. There are two dominant forms of promotion, which are advertising and personal selling (Slater & Olson 2001). The focal point for advertising is for creating awareness and interest, and for reaching a broad market and Personal selling is particularly appropriate when customers require more in depth knowledge or information in real time (Slater & Olson 2001). They also asserted that for more expensive, complex, or high-risk products, personal selling might be necessary to close the sale. This project considers advertising to see how the various companies advertise their services to create interest from consumers, creating awareness and in reaching a bigger part of the market.

3.3 Business Models

The term "Business Model" has evolved from practitioners and academics regarding its practical and theoretical importance (Antero, Hedman, & Henningsson, 2013). The use of the "business model" concept has developed (Osterwalder et al., 2005) from prior endeavours to classify and define business models for electronic markets (Rappa, 2004), construct evaluation policies (Poel et al., 2007), examine performance of the firm (Malone et al., 2006), and understand business model economics (Brousseau & Penard, 2007). There are a lot of advantages that are linked up with developing business models for one company as well as making sure that the right factors or elements are in place in the model.

Business models are rudimentary in explaining the ways that companies relate and interacts to its suppliers, competitors, and customers, competitors network (Magretta, 2002). Business Models represents value creation (Amit and Zott, 2001), plays a basic role in any organization (Hedman & Kalling, 2003), secondary and primary activities (Osterwalder et al., 2005), value and cost (Stabell & Fjeldstad, 1998), and the role of management (Hedman & Kalling, 2003). It has also been observed that most of the roles it plays are due to the capabilities that the business model provides (Sang, Chae, & Hedman, 2015). Business Model authorizes businesses and

technologies stakeholders to manage and analyse strategic-oriented decisions, communicate and understand decisions among each other (Osterwalder & Pigneur, 2013), and across the change of business logic of the organization (Osterwalder et al., 2005). The elements or factors under business models are somehow interconnected with each other; one leads to another. Chesborough and Rosenbloom (2002) reports that business model provides a holistic viewpoint of the business, that helps to understand internal structures and functions, interaction dynamics, and interconnectivity with the external world. However the idea of business model has been treated as a set of divergent types rather than merging it into a generic concept that apprehends a broad diversity of real-world scenarios (Sang et al., 2015).

A lot of business frameworks models have developed (Al-Debei & Avison, 2010), and they vary in depth and rigor, as well as their complexity in which elements, definitions, and their relations are analysed and included (Antero et al., 2013). Al-Debei (2010) presents an examination of business model frameworks. The findings demonstrate two things. First, while the names and number of elements and dimensions included differ between frameworks, most of these business model components correspond to clear themes, including finance, network, customer, and offering value preposition. Again, more of the frameworks originate from eBusiness context or a strategy (Hedman & Kalling 2002), and only a certain number of frameworks originate from the mobile or payments area (Carton et al., 2012).

Last, most frameworks take an inside-out point of view which centres on individual enterprises or the business logic rather than on the dynamic interaction within "*value networks"* (Solaimani & Bouwman, 2012), thereby missing the features of the particular organization and external threats (Antero et al., 2013). Bouwman et al. (2008) captured the external marketplace dynamics in their business model framework. They argued that organisations do not work in emptiness, but preferably affect and dependent on the environment. Their business model takes a network-centric view (Zott el al., 2011) of the business; organisations are part of a value web or a value network (Bouwman et al., 2006) that firms exchange capabilities and resources in simultaneous order as well as parallel (Antero et al., 2013).

3.3.1 Elements of Business Models

Antero et al. (2013) built on literature review of prior business model frameworks and brought forward a business model for mobile payments. They classified the business model into five main elements: threats, value finance, value architecture, value network, and value service. Again, they developed a sub dimension beneath each dimension and thus provide the platform for a second opportunity for analysis.

The *threat* dimension covers the inclusion of the environment. Antero et al. (2013) proclaims that the "threat" dimension portrays the possible and profound threats that may jeopardize the economic viability of a business

model of mobile payment. Again, Carton et al., (2012) contends that unforeseen threats are more likely to occur especially in the emerging and young mobile payments market, with its peculiarities and uncertainties. Regulation, technology, and market were the three types identified (Antero et al., 2013). There are more likely threats to hinder the success of the business model, which have not been mentioned and they also fail to address the internal threats that may emulate from the premises or business environment.

The *value finance* dimensions explain the required needed fundamental arrangements to fortify the economic viability of the offering (Al-Debei & Avison, 2010). Revenue structure, pricing, and cost make up the value finance element (Antero et al., 2013). Revenue streams from the value offer by the providers of the mobile payment service are included in the revenue structure (Antero et al., 2013). The various revenue sources can be classified as third parties, merchants and consumers (Pousttchiz, 2008). Again, disparate revenue types can be distinguished as transaction dependent on or independent (Turowski & Pousttchi, 2004). The first, which the transaction is dependent on, relates to revenues which are generated based on each transaction and the latter (the independent one) shows revenues that are not tied to the volumes of transaction, but rather to setting costs for a particular period, such as royalty costs, support, integration and similar and/or nonrecurring costs (Antero et al., 2013). They proclaim that consumers mostly with larger transactions prefer the latter type of cost or fee structure in their contract but it is also necessary to note that consumers with one or smaller transactions also prefer to deal or go with the transaction dependent on. In this paper, the first is considered in this study because the cost of transaction for the mobile money (for users) is based on each transaction a user makes. The merchants, agents and institutions often prefer the later one which is setting costs for a specific period.

The *value architecture* dimension reflects an uneven expenditure that recognizes all the necessary technological architecture arrangements, that allows for an efficient and effective operation (Al-Debei & Avison, 2010). Moreover, it enumerates the organizational infrastructure arrangements, such as management mindset, company culture, or key functions and processes. This dimension comprises three elements which are core competencies, value configuration, and core resource (Antero et al., 2013).

The *value service* dimension covers all features of the target organisation's offering to the customers (Antero et al., 2013). It incorporates the distribution channel, target segment, and value proposition, target segment, and distribution channel (Hedman & Kalling, 2003).

The *value network* dimension incorporates the multiplex nature of the mobile payment industry with its countless stakeholders (Antero et al., 2013). Antero et al. (2013) highlights the cross-company or inter-organization perspective toward value creation and capture from innovation. Camponovo and Pigneur (2003) asserts that this concept represents the way in which transactions are facilitated through collaboration and coordination

stakeholders, multiple companies, and among parties. So, when analyzing *value networks,* it is helpful to look at them from three perspectives: partnership, network mode, and governance (Al-Debei and Avison, 2010).

3.4 Payment Ecosystem

This section will review theories on technology-based payment ecosystem, the features of the ecosystem and the Market cooperation framework of mobile payment. This will help in validating the successes of the mobile pay and subsequently provide the relationship between the various stakeholders or actors involved within the mobile payment in Ghana, which is preferably the study area for this paper.

3.4.1 Definition of ecosystem

The term has existed over 50 years ago and is not new to the world. Biology is where the term originated (Tansley, 1935). The ecosystem concept has appeared in so many different scientific domains, which includes payment (May et al., 2008), information (Moore, 1996), technology (Messerschmitt & Szyperski, 2005), and business (Selander et al. 2013). The term therefore needs to be defined in general to assert the meaning in general terms before proceeding to the next level. Ecosystem is explicated as a co-opetitive environment in which relationships are formed symbiotically to generate value mutually for its stakeholders (Selander et al., 2013). It can be deduced from the meaning that ecosystem helps creates value in ways that are unimaginable and ensures a competitive platform. "Ecosystems are essentially defined by the active shaping of relationships between their members" (Selander et al. 2010, p. 2). Based on the various definitions given and with respect to the subject, the term "ecosystem" will be defined as "a competitive environment where relationships are established mutually to create value for the stakeholders".

3.4.2 Features of Ecosystem

Features of the ecosystem have been observed. Four attributes of ecosystem have evolved from the literature. First, an ecosystem is distinguished by concurrent cooperation and competition, so called co-opetition (Brandenburger & Nalebuff, 2011). Co-opetition is understood to be some form of competition among various stakeholders. Some stakeholders are depicted as direct competitors as anaylsed at the micro-level, while the macro-level analysis portrays the same stakeholders as mutually dependent on the success of the ecosystem (Hedman & Henningsson, 2015). Hedman and Hennigsen (2015) posits that there may be some level of collaboration in some setting with other stakeholders in the ecosystem, which results in strategic networks. There is at times some sort of collaboration and or some sort of relationship that will exist within various actors which one way or the other generates success of the ecosystem. The micro-level and macro-level will be dealt with at the latter part of this section.

Second, a crucial success element for a thriving ecosystem is the relationship seen among the stakeholders in the

ecosystem (Hedman & Henningsson, 2015). Hedman and Hessingsson (2015) report that for individual stakeholders, this is partly a matter of managing resource dependencies. Stakeholders in the ecosystem can exercise power over other stakeholders especially those that control important resources, and as well can encapsulate a bigger section of the total revenues of the ecosystem (Hedman & Henningsson, 2015). This indeed can also result in negative consequences for the business and the stakeholders present within the ecosystem. For instance, if the stakeholders that control key resources clasp the "keystone advantage" are employing too much force respective to the other stakeholders, it might be disastrous to the ecosystem, and this may be a destruction to the business of the keystone and stakeholders as well (Iansiti & Levien, 2004).

Third, Hedman and Hessingsson (2015) reported that ecosystems have observable differences. They elaborated it with an example within the business ecosystem; there is always a closer relation with some stakeholders than other stakeholders. This leads to a problem of stakeholder inclusion (Hedman and Hessingsson, 2015). The inclusion problem is not distinctive to ecosystems, but has been argued immensely in previous literature and known to be a classical problem in social theory (March and Simon 1958). This is partly due to the reality that is not people, who are organised but the activities (Weick, 1969). The problem is highlighted in the examination of ecosystem, where it can be seen that some or preferably most of the organisations are involved in two or more set of associated coordinated activities (Hedman & Henningsson, 2015) which can lead to positive results as well as negative result jeopardizing the firm. This is why individuals can be part of both an organisation and its environment and likewise, an organization can be a stakeholder in many ecosystems (Hedman & Henningsson, 2015).

Typically, ecosystems are not stable but continually developing (Hedman & Henningsson, 2015) and this is the fourth feature of the ecosystem. Ceaseless adaptations in the relationships between ecosystem stakeholders across micro, meso, and macro-levels make ecosystems dynamic (Hedman & Henningsson, 2015). Hedman and Hessingsson (2015) posit that these methodical properties of the ecosystem signify that change in the entities of the ecosystem will activate changes and responses in other entities. Given the co-opetitive nature of the relationships among stakeholders in the ecosystem, the changes respond to the demand to apprehend value in business in a method that fosters the value appropriation potentials of other stakeholders in the ecosystem (Hedman & Henningsson, 2015).

3.4.4 Payment ecosystem as technology-based

Ecosystems modify quickly along with innovations in technology that changes conditions for the business landscape and has been reported by various researchers (Yoo et al., 2008). The traditional logic is being reshaped basically by the generations of the new technology, and with surrounding technology business process becomes intertwined with each other (Basole, 2009). Hedman and Hessingsson (2015) posits this to be true with respect to

the payment ecosystems. They conceptualised a payment ecosystem as one that exits in a "fusion relation" (Sawy, 2003) to technologies, whereby technologies find themselves to be part of the technology ecosystem. Adomavicius et al. (2007, p. 201) define a technology ecosystem as a "system of interrelated technologies that influence each other's evolution and development." The definition was built on the perspective of developing elements of multiplex technologies as being mutually interdependent (Iansiti & Khanna 1995).

The selection of a specific technology from the customer side is linked with a decision to be part of a certain business network that works in a specific technological system with technologies that make use of each other (Shane, 2001). Markets built on services or products where compatibility is a crucial element are distinguished by system-based competition (Katz & Shapiro, 1994). Hedman and Hessingsson (2015) asserts that these markets have compatible products that create higher worth as a system and complement each other within. For instance, in the telecoms network domain and mobile handset, smartphones and applications are typical example of interdependent products (Hedman & Henningsson, 2015). It is proper to note that, mobile payments in Africa is not usually an app even though you will get some using apps but most of them are just connected with the sim sold by the telecom companies.

Complementary or interdependent products mutually rely on each other and strengthen each other's performance results (Hedman & Henningsson, 2015). They help each other within the market and by so doing help increase profits for the respective businesses as well as creating a demand for the products. The total sum of the values of the individual products is much less than the value of the system (Tanriverdi & Lee, 2008). Having this in mind, consumers prefer to acquire complementary products or technologies as a system of complements rather than as stand-alone products because technologies must interoperate (Lee et al., 2010).

For this paper, I stick to the payment ecosystem stakeholders. For the payment ecosystem stakeholders, the connected relationship between strategy and business means that the competitive and collaborative strategies of the individual business cluster and business units in the ecosystem are inextricable from the strategic adoption of technology. I will like to validate on the field as well if there is any compatibility of products within the market that make consumers make decisions in choosing a certain telecom company when it comes to mobile payment over the other and asserts the relationship between business and strategy in the payment ecosystem.

3.4.5 Mobile Payment Market Cooperation Framework (MPMC)

Hedman and Hessingsson (2015) developed the MPMC framework in three steps (see fig. 1). They discuss how market cooperation can use technology in their strategies. The strategies can help cooperations within the market to prepare for competition and how to even disrupt competitors from entering the market and can also help new ones develop a way to enter a specific market. With respect to the strategies, Hedman and Hessingsson (2015)

discerned two generic strategies. They proposed the "build-and-defend strategy" (this strategy is used defensively to fight off new entrants by established competitors) and "battering-ram strategy" (this is referred to as offensive strategy whereby new entrants into the market use to enter the market).

An ecosystem in which technology strategies and businesses are inseparable are referred to as "payment ecosystem" (Hedman & Henningsson, 2015). And with the outcome, offensive and defensive market strategies use technology at the various degrees in the ecosystem, which include the macro-levels, meso and micro (Hedman & Henningsson, 2015). The MPMC structure combine the practicable use of technology to approve strategies for the market with the three degree of ecosystem analysis (Hedman & Henningsson, 2015). Technical compatibility makes it feasible for companies to implement their strategies in the market with mobile technologies (Hedman & Henningsson, 2015). Hedman and Hessingsson (2015) asserts that collaboration and competition exit at all three levels, and accordingly, technology based market cooperation strategy in mobile payment ecosystems can be understood as a three-level encounter between offensive and defensive technology based strategies:

"On the micro-level, individual business units challenge themselves with market cooperation strategies established on proprietary technologies, for example, the traditional card terminals that one discovers at most cashiers versus the mobile dongle card readers" (Hedman & Henningsson, 2015, p. 5).

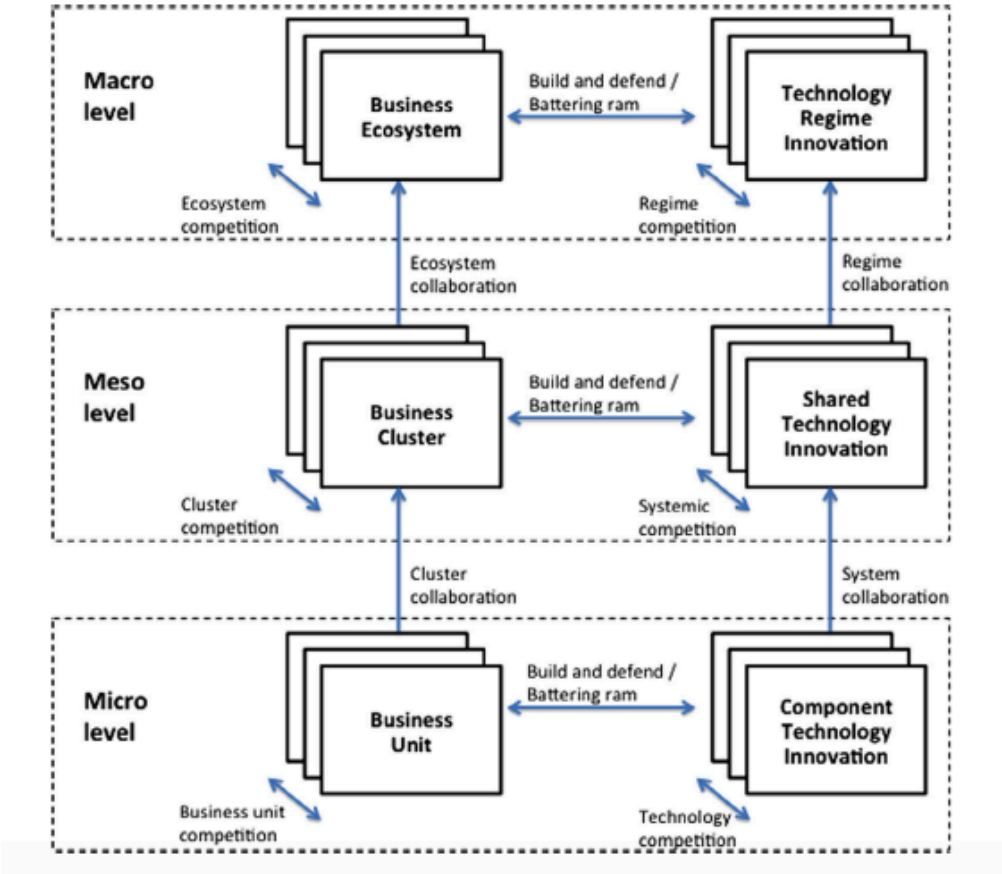
"On the meso-level, informal and formal strategic networks and alliances are launched as a result of stakeholders connecting forces in clusters to compete with other clusters of stakeholders using market cooperation strategies based on shared technologies, for example, the entrance of mobile operators in the payment sector providing SMS payments" (Hedman & Henningsson, 2015, p. 5).

"On the macro-level, the ecosystem of interdependent stakeholders will compete with other ecosystems through market cooperation strategies based on technology regimes. For example, stakeholders like Bitcoin may threaten the whole industry" (Hedman & Henningsson, 2015, p.5).

Hedman and Hessingsson (2015) contend that stakeholders found within the payment ecosystem contribute to its technologies by adoption and through innovation either in a collaborative or competitive manner with other stakeholders. In the collaborative mode, stakeholders in the macro, meso or micro-levels will adopt or innovate component together, support technologies that will be of interest for the stakeholders in the collaboration (Hedman & Henningsson, 2015).

In the MPMC framework, it is seen that there is a competition at every stage between stakeholders (who we can classify as the organisations) and factors and elements have been elaborated and drawn to help various organisations to adapt to the market and its threats that may occurred.

Figure 1:Mobile payments market cooperation (MPMC)



Source or derived from: Hedman & Henningsson, 2015, p.5

3.4 Summary and conclusion

Having elaborated and reviewed various literatures, it is imperative to summarize and concludes the chapter. It was learnt that business strategy helps an organization to achieve a "competitive advantage" (Slater & Olson, 2001). On the other hand, marketing strategy helps to achieve marketing objectives and helps meet the demands of a firm's customers (Cravens, 1999). Prices, in this case the transaction cost, are considered when setting up your marketing strategy. It was noted prices are sometimes set as premium prices where "innovativeness" (Kerin et al., 1992) is considered. Again, business models elaborate on the ways that organisations relates and interacts to its competitors, network, customers, and its suppliers (Magretta, 2003). Payment ecosystem encompasses various stakeholders forming relationships in the ecosystem to mutually create value and ensures a competitive platform (Selander et al., 2013). The next chapter delves into the evolution of mobile money in Ghana, definition of mobile money, mobile network operators and deployments of mobile, mobile money adoption in Ghana, and challenges hindering the use of mobile payment.

CHAPTER 4

EVOLUTION OF MOBILE MONEY PAYMENTS IN GHANA

4.1 Introduction

This chapter elucidates the evolution of Mobile money service in Ghana, definition of mobile money, adoption of mobile money in Ghana, definition of mobile money and mobile money in Africa, Mobile Network Operators (MNOs) and deployments of mobile money services in Ghana, and MTN Mobile Money Service. This chapter adds up to the literature reviewed in Chapter 3. This is mostly literatures and publications reviewed on mobile payments in Ghana.

4.2 Definition of Mobile Money

Mbiti and Aker (2010) 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. Jenkins (2008) however defined Mobile Money as money that can be used and accessed via mobile phone which is 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. Mobile Money allows subscribers to bank directly from their mobile phones without physically being in a financial institution like the bank (Afanu & Mamattah 2013). Transactions such as sending and receiving money, buying airtime, payment of bills and buying internet bundles can be done through your mobile wallet on the phone. The researcher has deduced the definition of mobile money as "money that is stored on one's sim card of a mobile telecommunication which is used in electronic transactions like sending and receiving money, making payments, buying airtime, without the use of physical money".

However, GSMA (2016) considers a service to be a mobile money service if it meets certain criteria and which they elaborate as the following:

- Includes transferring money and making payments using the mobile phone.
- The service must be available to the unbanked, e.g. people who do not have access to a formal account at a financial institution.
- The services must offer at least one of the following products: Domestic or international transfer
- Mobile payment, including bill payment, bulk disbursement, and merchant payment
- Storage of value
- The service must offer an interface for initiating transactions for agents and/or customers that is available on mobile devices

- The service must offer a network of physical transactional points outside bank branches and ATMs that make the service widely accessible to everyone
- Payment services linked to a traditional banking product or credit card, such as Apple Pay and Google Wallet, are not included
- Mobile banking services that offer the mobile phone as just another channel to access a traditional banking product are not included

Mobile money has been cited by various literatures as a growing trend in Africa. M-PESA is the most engaged about in most literatures which is used in Kenya, and Tanzania and operated by Safaricom. In March 2007, M-PESA was launched and recorded 6 million registered users in 2009 (Weil & Mbiti, 2011). Jack and Suri (2011) contended that it is an innovation that dominates its money-transfer predecessors on almost all dimensions. They posit that most of their respondents engaged in were on the agreement that mobile money is faster, cheaper, more reliable, and safer. Others also indicated that they would be affected if in any case the service discontinues. Mobile money in Africa has well been elaborated in Chapter 2, therefore, it is imperative to move on to discuss evolution of MMS.

4.3 Evolution of Mobile Money Services (MMS)

Ghana has had a bad domestic remittance before mobile payments or mobile banking came into existence. The available methods that were available then brought about theft and most of all insecurity to everyone engaging in such transactions and activities. Tobbin (2010) asserted that diverse challenges and difficulties are a result of the informal methods of remitting money within Ghana. The need for money transfer services have been quite significant with the constant migration and an increase in urbanization in various city centres (Tobbin, 2010). As people move from the various rural areas and even urban areas to relocate there is the need to send money to their relatives or families over there, hence making the mobile money initiative necessary.

Until the evolution of mobile money services, the major method used for sending money has been through the "Bus Driver". People visit the various bus stations to send monies to their families; they do this by giving the money and the number of the person to the driver and with a little incentive (this is charged by the driver depending on the parcel or what one is sending), the money or parcel is sent to the receiver's end. When the transaction has been complete within the sender and the driver, the money gets to the receiver within hours depending on the distance the vehicle takes to get to its destination. "Other informal methods were engaging the use of friends and family members travelling long distance to remit the funds whenever necessary" (Tobbin, 2010, pg 2). Accidents, armed robbery, and thefts are few challenges that occurred with the use of these informal methods and when this happens the funds are entirely lost and no one can blame or ask the driver or family member to pay back. Looking

at these challenges, the MNOs decided to bring forth some initiative that has already been running in some countries into the country. This was necessary because majority of Ghanaian household depends on sending and receiving money.

Ghana continues to have a great number of households that depend on domestic remittance (Tobbin, 2010). With this, the Mobile Network Operators (MNO) especially MTN Ghana Limited (the pioneer) decided to bring out an initiative which is called MTN mobile money services to help with the remitting of funds within families, creditors and debtors, payment of bills in the country.

Figure 2:Evolution of Mobile payments in Ghana

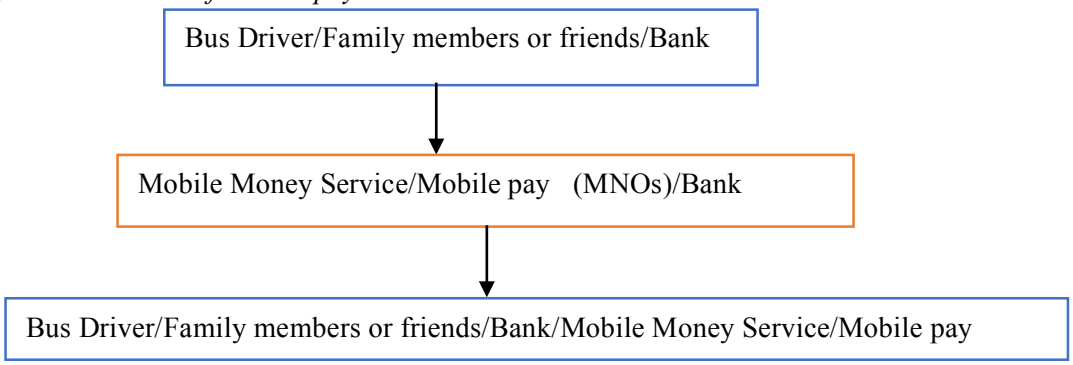


Figure 2.0 indicates how mobile money evolved to solve the informal way of sending money to families, friends, creditors, debtors but gradually it can be seen that some users or people either the users of the mobile money service or not are gradually moving towards what the Mobile pay(M-pay) came to solve. This initiative was to eliminate the informal ways of sending and receiving money but why then are people leaning towards that approach (informal) again. The researcher intends to find out as it has been clearly stated in previous chapters that why this is the case and what is motivating them to move towards something that brings about insecurity and challenges.

4.4 MNO's and Deployment of mobile money services in Ghana

There currently exists six MNOs in Ghana namely MTN Ghana, Vodafone, Airtel, Tigo, Glo, and Expresso. MTN Ghana Ltd continues to top the chat of the bigger percentage of the market for quite some number of years. NCA (National Communication Authority, (2016), reported that there was increment in share of the market comparing October and November (2016) for MTN, Vodafone and Tigo, but recorded a decrement in share of the market for Airtel, and Glo. They posit that the total number of mobile subscriptions as at the end of October had increased from 37,369,666 to 37,932,440 as at the end of November 2016. This represents a percentage increase of 1.51%. They asserted that the total rate of penetration under the month of review was 135.29%.

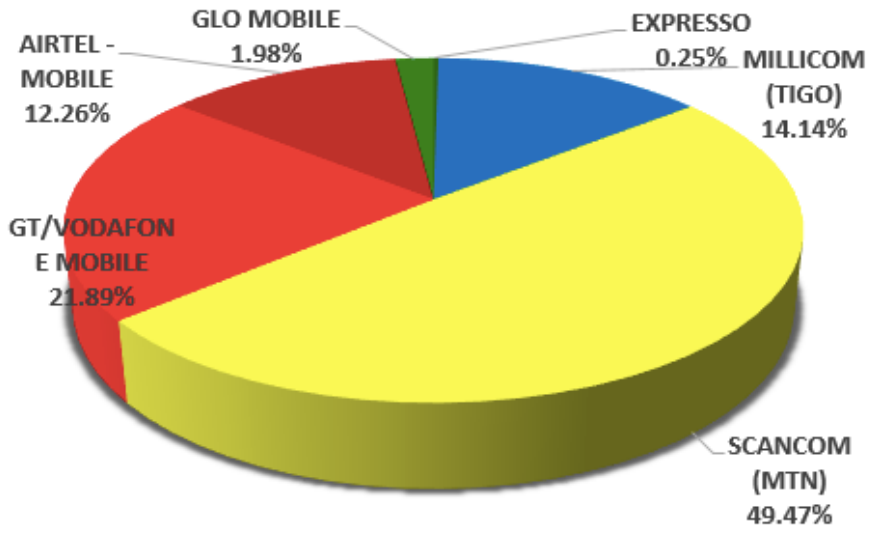
MTN's subscriptions for the period was 18,766,106, which represents a percentage increase of 2.65% from October 2016's figure of 18,280,956. MTN's market share for the month under review was 49.47%. Vodafone on

the other hand recorded mobile subscriptions of 8,304,783 as at the end of November 2016. This represents a percentage increase of 1.64% from October 2016's figure of 8,170,504. Vodafone's market share for November 2016 was 21.89% (NCA, 2016). Tigo recorded an increase in their mobile subscriptions as figures increased from 5,362,642 as at the end of October 2016 to 5,365,318 as at the end of November 2016. This indicates a percentage increase of 0.05%. Their market share for the month under review was 14.14% (NCA, 2016).

Expresso recorded a decrease in their mobile voice subscriptions as figures decreased from 99,489 as at the end of October 2016 to 95,548 as at the end of November 2016. This represents a percentage decrease of 3.96%. Their total market share for the month under review was 0.25%. Glo's subscriptions decreased from 769,450 as at the end of October 2016 to 750,751 at the end of November 2016. This reflects a percentage decrease of 2.43% for the month. Their total market share for the month under review was 1.98%. Airtel's subscriptions decreased from 4,686,625 as at the end of October 2016 to 4,649,934 at the end of November 2016. This represents a percentage decrease of 0.78%. Their total market share for the month under review was 12.26%.

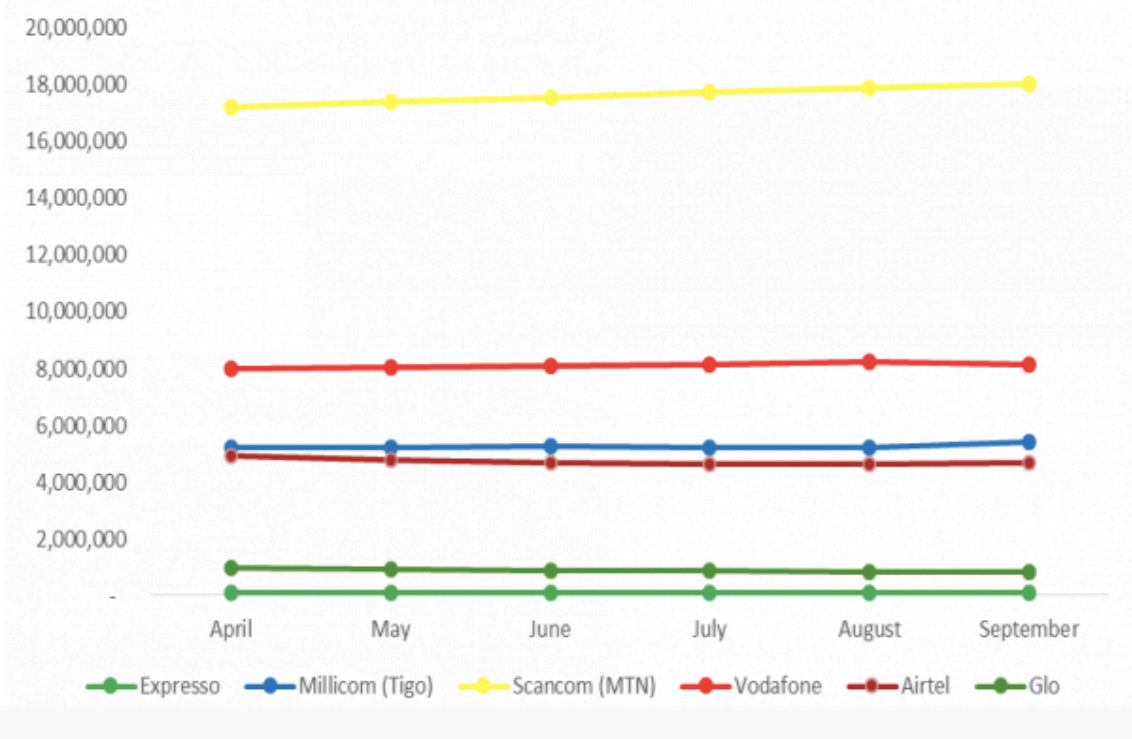
MTN Ghana continues to have the greater share of the market for so many years as compared to the other networks and this is one of the reasons why it was selected for the case study for this research.

Figure 3:Mobile subscription market share for November 2016



Adapted from NCA (2016)

Figure 4:Mobile subscription trends from January to November 2016



Adapted from NCA (2016)

NB: Apart from Glo and Expresso, the other available mobile networks in the Ghana have also launched mobile banking platforms (m-banking), which are being accessed by the populace who have a valid photo ID and are subscribers of these telecommunications companies.

4.5 MTN Mobile Money Service

In July 2009, MTN Ghana initiated mobile money cash management service in the country that was termed MTN Mobile money. MTN mobile money is a joint effort collaboratively between MTN Ghana, authorized merchants, and over 10 banks now. Some of the banks include but not limited to Ecobank, Fidelity Bank, GT Bank, CAL Bank, Stanbic Bank, Zenith Bank, UBA, Merchant Bank, Intercontinental or Access Bank, and Agricultural Development Bank, in Ghana (MTN Ghana, 2017). As at writing this paper, the banks have a total number of 16. MTN Ghana sets up mobile money transfer that thrives to achieve "a fast, simple, convenient, secure and affordable way of transferring money, making payments and doing other transactions using a mobile phone" (MTN Ghana, 2017).

MTN mobile money can be used to send money, top-up MTN airtime, pay bills (DSTV, ECG Postpaid, MTN Postpaid, school fees and more), buy and pay for insurance, pay employee salaries, pay for school fees, and other

goods and services. There is no need to travel or wait impatiently to receive or send money. The subscribers of MTN Ghana Mobile Money include Ghanaian citizens who have a valid photo ID. To register for MTN Mobile Money, subscribers need to bring along a valid photo ID to any nearest MTN Mobile Money Authorized agent or merchant to get Mobile Money registration form filled out and load their Mobile Money sim card. Upon registering, subscribers open a valid electronic wallet (e-wallet). E-wallets are electronic bank accounts where subscribers can store money electronically. Again, e-wallets are "…opened and owned by partner Banks," and every transaction conducted through this electronic wallet must be authorized with a PIN code (MTN Ghana, 2017). One can access his or her mobile money wallet by dialing *170# to follow up with the pop up options from there.

In the next topic, I will address the mobile money adoption in Ghana.

4.6 Mobile Money Adoption in Ghana

Tobbin and Kuwornu (2011) developed a model that tried to predict the elements that affect consumer behaviour towards the adoption and use of mobile money transfer in Ghana. Again, they identified the various key determinants of user acceptance of mobile money transfer. Their analysis revealed 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'. However, only 10% claimed to have used the service. They acknowledge that knowledge of the service was not reflective of its usage. As at the time of their study, Airtel's ZAP (now Airtel Money) and MTN's Mobile Money were the only two mobile money transfer services available in Ghana. There are currently four telecom companies operating mobile money service in Ghana.

They concluded that as part of financial services, the adoption of mobile money transfer is dependent on consumers' perception on trust and risk. The findings however support the traditional view on the effect of risk and trust on the usage of financial services (Tobbin & Kuwornu, 2011). However, it is assumed that the usage of financial services like MMS are sometimes linked to the traditional view on the effect of risk and trust.

4.7 Cashless system in Ghana

Ghana has been pushing for a cashless system for quite some time now. The system whereby there is the use of electronic payments (e-payments) for goods and services. Over the years, Bank of Ghana (BOG) has been pushing for a cashless system in the country and this led to the introduction of e-ZWICH card through the collaboration with GHIPPS. However, e-ZWICH has underperformed since its introduction (Issahaku, 2012). The study reviewed the challenges of e-payment systems in Ghana using the case of e-ZWICH. Issahaku (2012) asserted that users of e-ZWICH prefer to use ATM rather than using their e-ZWICH card. This was identified with concerns

and challenges that are hindering the success of the e-ZWICH service. The concerns include but not limited to long queues, slow process of service delivery, frequent breakdown of the "Point of Sale" (POS), link failure. Again, one other major concern was the inaccessibility of the POS device before and after banking hours, thereby, preventing users of e-ZWICH from making maximum use of the service.

In defining a cashless system, Omotunde et al. (2013) posit that to be a system whereby transactions can be done without necessarily using physical cash as a means of exchange but rather with the use of credit or debit card for payment of goods and services. They argued this is an economic setting where goods and services are purchased through electronic payments and this is not a complete absence of cash. Okoye and Ezejiofor (2013) 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. The researcher then can define a cashless system as "a system whereby people have opportunities to transact business through electronic payments or means and not necessarily holding cash for goods and services".

Appiah et al. (2014) undertook a study on users' perception and usage of e-payments in Ghana. They identified five types of e-payments, and these are, credit cards, debit cards, charge cards, stored value cards, ATMs and mobile payment systems. Their research review that majority of the respondents (88%) were aware of mobile banking. 52% were aware of debit cards, 88% were aware of credit cards and 84% were aware of e-ZWICH. Their respondents were in favour that e-payments are convenient to make transactions because it allows users at the convenience of their offices, homes to access and make transactions on their account without difficulty. Again, the respondents agreed that electronic payments are easy to use and charges are affordable. They concluded that their research confirms that e–payments are effective in making transactions and it is also accurate, convenient, and time saving than cash system.

Several studies continue to confirm that there is an array of hope in pursuing a cashless system in the country but the major challenge continues to be which one to use. However, the use of ATM continues to top the chart but unfortunately for users it is a debit card and can only withdraw money from one's account in Ghana. This process ends up with the user having cash in hand, hence, still promoting the use of cash.

Agarwal et al. (2011) contended that even though the ATMs provide cash services within the week and 24-hour service daily, they continue to deal with paper currency. There is also a high cost in maintaining the machines and consistently refilling with cash. They asserted that due to the easy availability of mobile phones, the use of mobile payments would soon dominate the world of electronic payments. This research therefore hopes to bring forth the challenges that affect the use of mobile money payments to eliminate the over dependence of cash in the system and this in a way promote a cashless system or economy in Ghana.

4.8 Challenges hindering the use of Mobile payment

There are several literatures around which talked about the general challenges that affect the use of mobile payment but not necessary the MTN mobile money. The researcher reviews some of the literatures below.

Afanu and Mamattah (2013) established that the processes of opening a bank account continue to cumbersome with a whole lot of documents being requested from the customer, however it is very easy to own a mobile money account as you just need a valid ID card. They identified PIN sharing as one of the security threat to the use of mobile money. They recommend 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 money account.

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.

Amankwa and Kevor (2013) also talked about network availability and interoperability being a problem to the use of mobile money. They asserted that the successes of mobile payment depend on the availability of the network.

The above challenges were identified by some researchers where they contended these challenges to be one of the concerns regarding the successes of the mobile payment.

4.9 Summary and Conclusion

In this chapter, various definitions of mobile money were learnt which include the ones from Mbiti and Aker (2010), Jenkins (2008), and GSMA (2017). However, the researcher deduced the definition of mobile money as "money that is stored on one's sim card of a telecommunication company which is used in electronic transactions like sending and receiving money, making payments, buying airtime, without the use of physical money". How there used to be archaic ways of sending and receiving money were also talked about and how it has evolved from that to the mobile pay. It was clear that there exists six MNOs in Ghana and four out of them operate MMS. MTN mobile money with joint collaboration with some banks rolled out MMS in 2009. Tobbin & Kuwornu (2011) asserted that as part of financial services, the adoption of mobile money transfer is dependent on users' perception on trust and risk. Finally, this chapter touched on some challenges hindering the usage of MMS and the greatest of them all is the network availability.

The next chapter engages the methodology used in gathering data and analyzing data. How data was analysed was also discussed within this chapter.

CHAPTER 5

METHODOLOGY

5.1 Introduction

This part of the thesis describes the research method deployed to generate data, the reason for the choice of research method and the opportunities and challenges encountered in the use of the research method. It also brings to forth how data was analysed, research questions were defined, the level of analysis, the level of analysis and the limitations encountered.

5.2 Data needed

This paper seeks to assess and examine MTN mobile money since its advent in Ghana. This was done from the perspective of the users and management. This helped the researcher get the right information to be able to assess the service to see how far it has come in achieving its objective, which was set for. I gathered information from the management of MTN Ghana concerning their views on the advent of mobile payment since they started it and to also know how they have been able to stay on top of the payment ecosystem for so many years in the country. Having these in mind, qualitative and quantitative research methods were used to help in gathering information. Patton (2005) posits qualitative research helps to analyse data from open-ended questions, written documents, in-depth, and direct fieldwork observations. He again said that researchers using qualitative methods engage in "naturalistic inquiry, studying real-world settings inductively to generate rich narrative descriptions and construct case studies" (pg 1).

5.3 Research Design Research Question

The study hopes to assess and examine MTN Mobile Money, identify and describe the concerns or challenges that affect its usage in eliminating most cash transactions from the economy. There was a comparison between bank transactions, ATM or e-ZWICH and Mobile money service (MMS) on the level of preference users have towards each of them. The researcher also identified the innovative ways MTN Ghana is using to stay on top of the Mobile Payment ecosystem in the country. Five questions were posed to assist in the development of the study's methodology.

1) How do users of mobile pay in the city of Accra use MTN Mobile money?
2) Has the adoption or the advent of Mobile Pay created any value for the users?
3) How innovative is MTN in staying on top of Mobile Payment in Ghana?
4) How satisfied and dissatisfied is it in using MTN Mobile money?
5) What are the various challenges currently in the use of Mobile payment?

The descriptive and exploratory research design was adopted in this study. The descriptive research design has the

objective of supporting local decision-making or to provide benchmarks against which to compare the results of future studies (Voorbij & Ongering, 2006). An exploratory research design is used when there are few or no earlier studies to refer to (Eugene & Christine, 2017). These designs serve on gaining insights for later investigations.

5.4 Sources of data

This study was a case study of MTN Mobile money service. Morris and Wood (1991) asserts that case studies are valuable when the researcher's interest is to gain a thorough understanding of the context of the research field and the processes being approved. They further argue that the case study approach helps to generate answers to "Why?", "What?", and "How?" questions. This will help obtain multiplex details and understanding of specific events under investigation; the researcher therefore adopted the case study.

Primary data was collected from users and management of MTN Mobile Money through questionnaires and interviews. The questionnaires were administered to MTN subscribers found at various locations in areas in Accra. The questionnaire was developed by the researcher and staff of MTN, and was also based on the literature reviewed in Chapter 3 and the research questions that are outlined in section *5.3* of this chapter. This data collection method provided the researcher with a pliable and low-cost way of gathering information concerning how users residing in the City of Accra, Ghana, use and are affected by MTN Mobile Money. The management of MTN mobile money was the only persons, who were interviewed for this study.

5.4.1 Questionnaire and Interview Design

Questionnaire was developed for users of the MTN mobile pay. The researcher-administered questionnaire included open ended questions and structured questions ranging from "Yes" or "No", likert scale responses, and was organized in two sections: the first section which was labeled "Part 1" was made up of demographic questions; the second part "Part 2" seeks to know in details the current users and those who have used the MMS before, and seeks to assess the current use of the mobile money service. However, the questions were based on the objectives of the study.

The researcher did the administrating of the questionnaire personally and this helped asked follow up questions to some answers offered by users. Users of MTN Ghana were selected randomly and given a questionnaire to answer. The survey lasted for 10 weeks (from January to mid of March) on the field. See appendix 1 for questionnaire.

5.5 Study Area and Population

The study area for the research was Accra. Accra is the capital city of Ghana. The reason to undertake the survey in Accra was because of the City being the capital of Ghana and moreover MTN Ghana has its headquarter situated in the city.

The population of interest for this study was users of MTN Ghana Limited. MTN recorded a total subscribers' of 18,280,956 as at November 2016. The questionnaire targeted the subscribers to be able to get those who are using the MTN Mobile money.

5.6 Response rate and sample size

Since it is impossible to survey the entire population of interest with their huge numbers, the researcher adapted to survey a sample of the population. This helped to make inferences about the larger population. A total sample of 200 questionnaires were administered and this was shared equally between both genders. The researcher employed a simple random sampling method as the sampling technique for the study. This ensured that the study's findings are unbiased and representative. The researcher received 147 questionnaires. 147 users completed or participated in filling the questionnaire and this make a response rate of 73.5%.

5.7 Data Screening

The researcher pre-analyzed data screening on the raw data before analysis started. Data screening is a fundamental step before starting the data analysis to avoid incorrect findings and results (Field, 2005). According to Levy (2006), screening is an essential step in the analysis process for four reasons: first, to investigate the accuracy of the collected data; second, to study extreme cases, or outliers and fix thrm; third, to treat missing data values; and fourth, to manage the response set issues (Levy, 2006). It is important to start analyse with data screening to be able to be left with the best answered questionnaires for analysis.

5.8 Demographic characteristics of respondents

The study examined the demographic characteristics of the mobile money users and not the management of MTN Ghana who were interviewed. The demographic characteristics include gender, educational level, marital status, and age of respondents. This provides an overview of the characteristics of respondents engaged in answering the questionnaire.

Table 5.1 Statistics of demographic respondents

		Gender of respondents	Level of education of respondents	Age of respondents	Marital Statues
N	**Valid**	147	143	147	147
	Missing	-	4	-	-

Source: Researcher's field survey (2017)

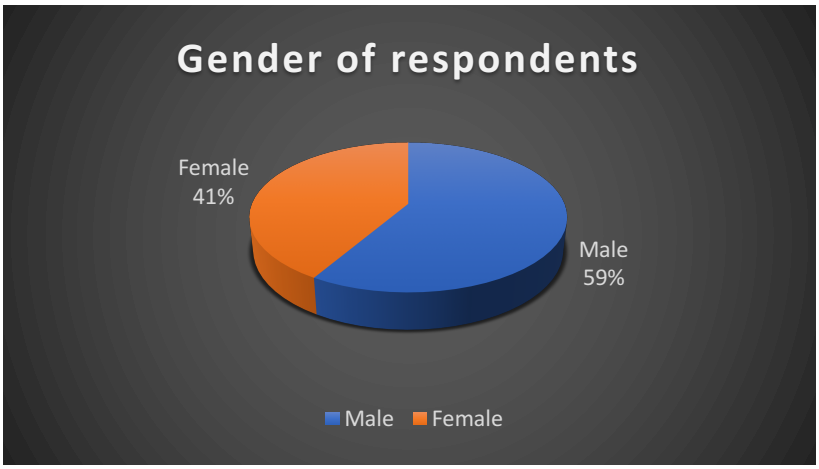
Table 5.1 indicates the total number of people who answered the demographic questions and the total number of respondents who did not answer some parts of the demographic questions. Out of 146 respondents, 4 did not

answer the question “Level of education”. This shows that 4 respondents had their own reasons for not answering the question and the researcher had no question in the questionnaire which sorts to know the reason why. The rest of the demographic questions had 100% response rate that include marital status, gender of respondents, and age of respondents.

5.8.1 Gender

There were two answers and respondents were supposed to provide which of them they fall under. The table below gives the sex of users. The gender shows us the total number of males and females who answered the questionnaire given or who were involved on the field.

Figure 5:Gender of Repondents



Source: Researcher’s field survey (2017)

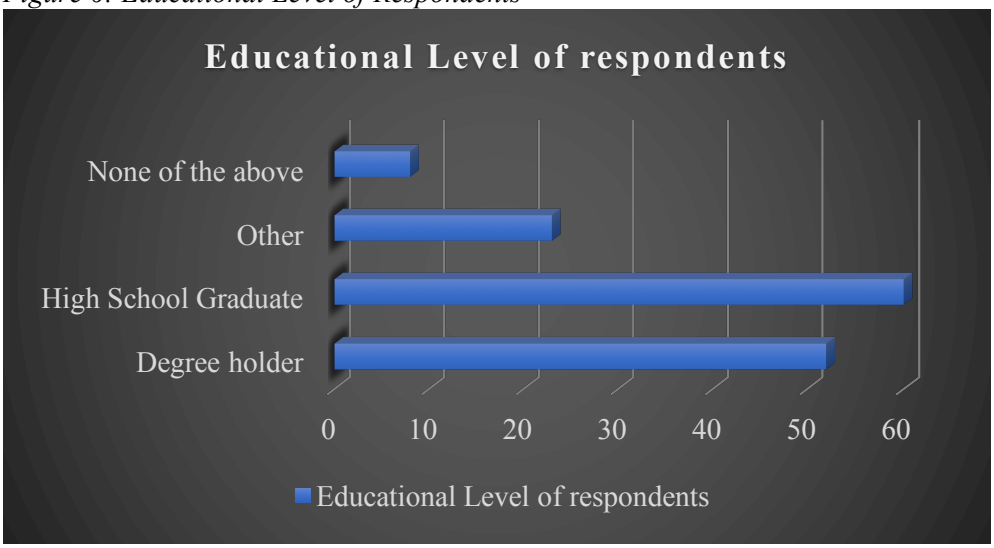
The above *figure* indicates the gender of respondents. Out of 147, 86 males answered the questionnaire representing 58.5% and 61 females responded which represents 41.5%.

Thus, the results show that responses (questionnaire) were fairly distributed between males and females because the males were just 15 respondents above the females. This indicates that the study had a good representation from both males and females. The distribution was not skewed towards one specific gender.

5.8.2 Educational Level

This part was grouped into four answers, giving the option for users in choosing what their educational level is. The table below gives details of answers of respondents.

Figure 6: Educational Level of Respondents



Source: Researcher's field survey (2017)

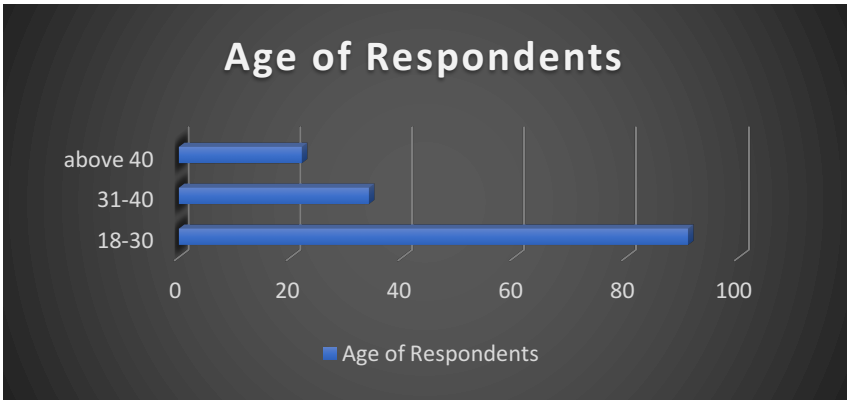
The level of educational level of MTN Mobile money users is indicated in Figure 6.0 above. It could be seen that most of users have completed high school (i.e. Senior High School and Junior High School) and this had a total number of 60 which represents 42.0%. It follows next by the degree holders (Bachelor, Masters, and PhD) with a total number of 52 representing 36.4%. Those with other certificates (which were indicated on the questionnaire) had a total number of 23, which represents 16.1%. Some of the other certificates indicated that they have professional certificates, HND, and some also indicated that they are still pursuing their degrees, which means they are still in school. A total number of 8 people indicated that they have no level of formal education and this represented 5.6%. 4 users chose not to answer this part of the question.

Therefore, it could be deduced that majority of the users of MTN mobile pay are educated with the number of high school graduates making up with the greatest number of users. Thus, the researcher concludes that educated people or literates are most likely to adopt the use of mobile technology services, like the MTN Mobile services more than the uneducated ones.

5.8.3 Age of Users

This part of the questionnaire allows users to indicate their age range. Possible options were given as age ranges were provided for them to tick one. Below indicates the statistics of the answers provided by users.

Figure 7:Age of Respondents



Source: Researcher's field survey (2017)

The researcher collected data in *figure 7.0* indicated the respondents' age. The youth continues to dominate with the use of mobile pay with 61.9% who are within the ages of 18-30. 33 users were found within the ages of 31-40 which represents 23.1%, and 22 users were found to be above 40 which constitutes 15.0%.

Therefore, 85% constituting 125 users were found to be at age 40 or below, and out of that 72.80% were found to be between 18-30. The adoption of the mobile pay continues to be recognized highly within the youth of the country. It may be that the youth tends to explore most of the benefits mobile technology offers and thus make maximum use of it. This goes to support the assertion made earlier that the youth are the most users of MTN mobile money.

5.8.4 Marital Status

There were three optional answers to choose from at this section. The first and the second option were the ones selected by users but the third had no tick by users so this could not be represented on the table when SPSS generated the descriptive statistics (i.e. frequencies). The third option was "divorce". This means that the users who answered the questionnaires are married, not married or single or goes on to show that not even one of the respondents has divorced. Statistics of the answers provided by users are indicated below.

Table 5.2 Marital Status of Respondents

Marital Status of Respondents					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Married	34	23.1	23.1	23.1
	Not married/Single	113	76.9	76.9	100.0
	Total	147	100.0	100.0	

Source: Researcher's field survey (2017)

Table 5.2 indicates the responses received from users concerning their marital life. Majority of them were not married or single as they took a percentage of 76.9% with total users of 113 while 34 users were married representing a percentage of 23.1. Therefore, the results show that users not married or single showed much interest in mobile money services and who are mostly within the youth age range of 18-30. A further analysis will be done to ascertain this assumption from the results received. This result received on the field confirms the general assertion that the youth who are not married or single are found to be more adaptive or tend to embrace technology devices as compared to the older people.

Table 5.2.1 Cross tabulation between marital status and age of respondents

Marital Status of Respondents * Age of respondents Crosstabulation						
			Age of respondents			Total
			18-30	31-40	above 40	
Marital Status of Respondents	Married	Count	7	8	19	34
		Expected Count	21.0	7.9	5.1	34.0
	Not married/Single	Count	84	26	3	113
		Expected Count	70.0	26.1	16.9	113.0
Total		Count	91	34	22	147
		Expected Count	91.0	34.0	22.0	147.0

Source: Researcher's field survey (2017)

The results in Table 5.2.1 shows the cross tabulation done between marital status and age of respondents. It elucidates that 84 users are not married ranging from 18-30, and 26 users ranging from 31-40 are also not married. However, 3 users above 40 are not married. 7 users between the ages of 18-30 are married and 19 users above 40 are also married. Only 8 users married are between 31-40.

Therefore, the results in the table confirm that those not married or single are between the ages of 18-30.

Chi-Square Tests			
	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	61.677[a]	2	.000
Likelihood Ratio	55.023	2	.000
Linear-by-Linear Association	54.170	1	.000
N of Valid Cases	147		
a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 5.09.			

The Chi-square indicated a strong evidence of a relationship between marital status and age of respondents reflecting those who were engaged. The values are as follows; Chi-square = 61.68, df = 2, $p < 0.1$.

5.9 Test Reports

Various tests were calculated with some of the variables in the analysis. The test includes Pearson chi-square test,

Cross tabulations, and Pearson Correlation. The median, mean and standard deviation were also calculated to ascertain the spread of measure of the likert scale questions. Some of the various tables for these tests will be represented in the analysis section and others too will be represented in the appendix and referred to when analyzing in the analysis section. A cross tabulation has already been done in this chapter for marital status of respondents and age of respondents.

5.10 Data Analysis techniques

The data gathered was analysed using the SPSS software and Microsoft Excel. Microsoft Excel was used in entering the open-ended questions found in the questionnaire. This helped to sort answers out and patterns were found with the answers provided by users that was subsequently entered or coded in SPSS for analysis.

In using SPSS, the structured or closed questions (like Yes or No, likert scale, etc) were coded and the responses were manually entered in the software. The input data was then manipulated using the software to obtain tables that required further interpretations. The mean, median and standard deviation were calculated for likert scale questions and tables were generated for further explanations.

5.11 Validity and reliability

Validity and reliability were something of priority to the researcher. Saunders et al (2009) asserted that validity of a research means the truth and accuracy of the data of the research as well as the findings that are generated from the field. They contended that 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. The researcher also adopted the triangulation method as suggested by Yin (1994) whereby two or more independent sources of data were used to validate the research findings within this study. These sources stem from various secondary data, directly or indirectly from the case company (MTN Ghana) or independent publications.

Therefore, to ensure validity and reliability of responses, the researcher made initial contact with key personnel involved in the administration of MTN Mobile money services. This was done to help the researcher know the kind of questions to put across to users to get the desired objective of this study. Again, the questions were examined by the researcher in terms of its content in relation to the objectives of the study. My supervisor also helped put some comments on some questions.

5.12 Level of Analysis

The study seeks to understand, assess and examine the current usage of MTN mobile money. What are the challenges and concerns in using the service? What innovative ways is MTN adopting to stay on top of the market cooperation of the payment ecosystem? What is the preference of using the service compared to precious (ATM,

e-ZWICH, or Bank service)? The information gathered helped the researcher to be able to assess how far the country (to be precise MTN Ghana) has come with this invention. Empirical data for this study was collected on the field of study (which is Ghana).

A travel was made to Ghana for fieldwork and empirical observations were made as well. Almost 200 respondents were asked series of questions through questionnaire. They were also asked if they would continue to use the service. Literatures on various topics related to the project were reviewed. Literatures like business strategy, business model, and payment ecosystem. Again, publications on the adoption, cashless economy as well as the challenges of mobile payment were reviewed. These have been well elaborated in Chapter 3 & 4. In the nutshell, I'm studying this to help provide some sort of information to the management of MTN Ghana to help make the service more fun to use in the process encouraging other to join as well as making it a success (as to the reason why it was set up in the country).

5.12 Limitations

There were some limitations faced by the researcher who carried out this study. First, the study used a mixed (quantitative and qualitative) case study design to examine the experiences of a specific group of users. As a result, the findings of this study are not necessarily generalizable to the larger universe of users who use mobile money services. Further, experiences of using MTN mobile money for various users can defer from each other. Moreover, collecting primary data in Ghana is difficult. This is difficult because most people in the country feel reluctant to provide information to people who seek them, and as a result, 147 questionnaires were received from a total of 200 questionnaires.

This study will focus mostly on the mobile pay in the developing countries but the research area will be in Ghana. A further research needs to be conducted in the other parts of the developing countries to see whether they are also being faced with the flashbacks in mobile pay as well as assessing the use of the service and the challenges being faced by accessing MMS in the country. This study will not focus on the other financial services in Ghana and this means that the study will probably not be able to contribute to the knowledge of other aspects of financial system in Ghana. These are the limitations for the study.

5.13 Hypothesis

Hypothesis were made to verify the dependencies of some of the variables. It helped the researcher test variables between some of the variables using SPSS.

CHAPTER 6

FINDINGS, DATA ANALYSIS AND DISCUSSIONS

6.1 Introduction

This chapter presents the data obtained from the field and analysed findings based on the objectives of the research as well as the research questions. Discussion is also done in this chapter on the data analysed. The data presented is based on the questionnaire (developed for users of MTN mobile money) and interviews with some management staff of MTN Ghana. The questions in the questionnaire were prepared with some staff of MTN Ghana and this helped in getting the best questions out there as it answers our objectives. The researcher would like to talk about how mobile payment started in Ghana and the Mobile Payment Market Cooperation (MPMC) before moving on to examine and assess the state of use of MTN mobile pay.

6.2 How Mobile Payment in Ghana Started

The management of MTN Ghana initially thought of achieving a competitive advantage over their competitors so they revised their business strategy. Business strategy is concerned with how business achieve advantage over its competitors (Slater & Olson 2001). They thought of providing something that could be of benefit to majority of Ghanaians. They saw a problem in the payment system in the country as well as helping move towards a cashless system for the country. The management of MTN viewed the problem as a product they could bring forth for subscribers to use. They then thought of what M-PESA is doing in Kenya and decided to develop something similar in Ghana to help with payments or sending and receiving of money and other activities. Porter (1980) proposed that the entrepreneurial problem should be viewed as a product of how the firm creates value, that is the differentiation or low cost, and how it defines its scope of market coverage, which focuses on focused or market wide. This is exactly what MTN did; that is, viewing the problem as a product and how they could make this product standout on the market. The management of MTN developed the “mobile money service” in 2009. The process is not cumbersome in becoming a user of the service. One needs to have a valid photo ID to be able to register for the service, and own an MTN sim card. However, Frimpong and Adu (2016) asserted that the registration or subscription for mobile money service was mixed. They posited that users on the greater percentage had no difficulties registering to the service, however, the same percentage likewise had difficulties. They concluded that subscribing or registering for the service was quite mild. Emma, (personal communication, January 2017) said that MTN is continuously making efforts to make registering of MMS less stress free and much easy for everyone.

In developing MMS, the management posed to themselves certain questions like should the product line be narrowly focused or sufficiently broad to cater for a set of complementary products. Kotler (1994) asserts that the most important decision taken by business is how big should products line be. MTN Ghana ended up narrowly

their products or services that they were going to offer. At first, it was mostly used in sending and receiving money and buying of credit but have developed overtime, whereby, users can pay their bills with it. The management of MTN Ghana piloted it in 2009 to test the market they are trying to serve; hence this initiated the *building phase of the loop* (Nordstrom, 2012) meaning the start-up of MMS. They revised their business model as well as their business strategy after some time based on how users received the service at the market. Users were not receiving it well on the market. They learned from the evaluation and feedback given by customers and in line with Nordstrom's (2012) build-measure-learn-loop, structural changes were made. According to Emma, (personal communication, January 2017), they considered the first piloted *mobile service* as their "minimum viable product (MVP) with which the build-measure-learn-loop" (Nordstrom, 2012) begun.

The first phase of the mobile money service was designed to subjectively measure and learn more about the market as well as the product (MMS). Again, this also helped the management of MTN Ghana to know if they are solving the entrepreneurial problem they discovered. They revised their business model as time goes by as well as business strategies and made a lot of structural changes; price (transaction cost) was affected. Emma, (personal communication, January 2017), contends that the prices were set on the premium prices. The premium price was based on the advent of the mobile pay and the service quality. Premium prices are justified based on the innovativeness (Kerin et al., 1992), superior product or service quality (Zeithaml et al., 1996), and or brand equity (Keller & Aaker, 1992) of the service. The transaction cost of the service was based on its innovativeness and the service quality. Unfortunately for MTN, some users are not satisfied with the prices that are being charged on making transactions; hence making some users drop off from using the mobile money. According to Emma, (personal communication, January 2017), is very unfortunate that some users are dropping off from using the service because of the prices but management will surely review the prices based on market evaluation and see the outcome of it. Emma, (personal communication, January 2017), also made mention that there are also some problems management have observed, and that the management of MTN is putting things in place to increase the limit on cash out and improving the service stability. Apart from the prices, there are other concerns and challenges that are hindering the successes of the mobile service. This revelation makes us believe that indeed there are problems hindering the successes and adoption of MMS. These will be later addressed in the study from the users' perspective as they are the users of the service. The researcher would like to move on to talk about the Mobile Payment Market Cooperation (MPMC) in Ghana.

6.3 Mobile Payment market cooperation (MPMC)

There are various actors who make up the stakeholders for MPMC in the country. Antero et al. (2013) classified these actors under value dimension whereby they assert the value network dimension which incorporates the multiplex nature of the mobile payment industry with its countless stakeholders. The payment ecosystem

comprises of stakeholders like the telecom companies (like MTN, Vodafone, airtel etc), Mobile network operators, merchants or agents, users and banks. They are all working in hand to make this mobile payment in the country a success. It could also be seen that all the telecom companies, banks, merchants see themselves as competitors and try to fight (getting a bigger share of the market) each other on the market. Hedman and Hennigsen (2015) classified this type of competition to be seen at the micro level where stakeholders are depicted as direct competitors. In this way, there is still a sort of competition between the stakeholders even though they are all working in hand to make mobile payment a success but the success of the mobile payment lies in the relationship between stakeholders. Therefore, the relationship between stakeholders is of priority of all stakeholders. Hedman and Hennigsen (2015) asserted that a crucial success element for a thriving ecosystem is the relationship seen among stakeholders in the ecosystem. The relationship between the stakeholders is always crucial in the successes of the mobile payment.

While, there is some sort of closer relationships with some of the telecom communications, MTN Ghana has continued to be innovative in all three levels (micro, meso and macro) where it now finds itself at the macro level. Tigo Ghana recently decided to join forces with airtel to provide the same services for the same users. MTN continues to be a stumbling block to a lot of stakeholders in a way of getting a much greater percentage of users of the market. The management of MTN continues to be innovative in a lot ways to make mobile payment a success. They do this by trying hard to get everyone (users) on board. They always try to bring out complementary products or independent products. For instance, they have a product at a cheaper rate (paying in installments) for users interested while having a sim and a modem (for internet) attached. These are some of things the other network operators find it difficult to emulate. This is done to get users to use the service while registering them for mobile payment. Complementary or interdependent products mutually rely on each other's performance results (Hedman and Hessingsson, 2015). However, Lee et al. (2012) posit that consumers prefer to acquire complementary products or technologies as a system of complements rather than as stand-alone products because technologies must interoperate. By so doing, MTN Ghana brings a lot of users on board making a widespread of the service and this helps with the success of the mobile payment even though MTN continues to have the bigger market share. Therefore, it is very crucial that one assesses and examines the current use of the service and making recommendations to the stakeholders helping them continually to make it a success.

The next topic will assess and examine the advent of MTN mobile money service, which is also known as mobile payment, but the common name known to Ghanaians at large is *mobile money*. In this research, mobile payment, mobile money, mobile money transfer and mobile money services (MMS) are both referring to the same thing; meaning mobile payment (M-pay).

6.4 Examining and Assessing the advent of MTN Mobile money

Having already assessed the demographic characteristics of the respondents in the methodology chapter, the researcher will move on to examine and assess the current use of MTN Mobile Money. In so doing, the researcher grouped them into specific objectives, which the questionnaire and the interviews conducted answered them. These groupings are referred in the paper as specific objectives. The various questions and interviews in the questionnaire are meant to arrive at the main objectives hence fulfilling the sub objectives. The researcher will start by examining the "flashbacks in of the use mobile payment" as well as the causes of it.

6.5 Flashbacks of Mobile Pay and Causes of it

Flashbacks were observed in the usage of mobile services, as users tend to stop the services provided by telecommunications (i.e. the mobile payment) and have moved on to their old ways (using transport, through people and banks) of sending money. This is necessary to be researched on as it is making some users dropped off using mobile payment. A series of questions were asked in the questionnaire to arrive at the causes of negative flashback and to also confirm that indeed currently there are *flashbacks* in the use of mobile pay. These questions also assessed the innovation (i.e the advent of MTN mobile money) in diverse ways. The following tables ascertain and arrive at the causes of flashbacks in the use of mobile pay.

Table 6.1 Have you used MTN Mobile Money before?

Have you used MTN Mobile Money before?					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	135	91.8	91.8	91.8
	No	12	8.2	8.2	100.0
	Total	147	100.0	100.0	

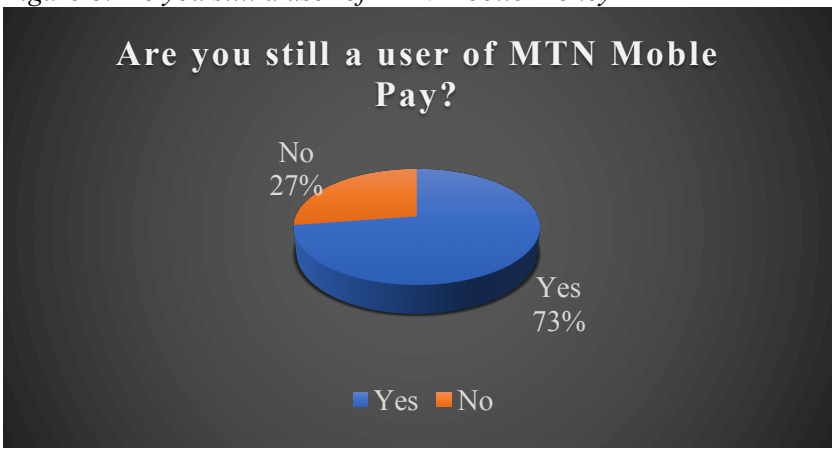
Source: Researcher's field survey (2017)

Table 6.1 above indicates the statistics of MTN subscribers who have used mobile money before. Out of 147, 91.8% of the majority claims to have used the services before while the remaining 8.2% claimed not to have used the services before.

Therefore, the researcher concludes that the 12 subscribers who said "No" might have not be aware of the services or are aware but they are not interested in using it, and 135 subscribers who use the mobile money services attest to the fact that there is a huge number of people out there who have used the mobile money before or who are aware of the existence of the mobile pay in Ghana. Investigations by the researcher showed that the 12 users have not being reached through advertising of the product by the telecom company. According to Slater and Olsen (2001), advertising is supposed to create awareness and interest, and for reaching a broad market. This means that MTN Mobile money might not be reaching these people because of little or no advertisement. As hinted earlier,

advertising helps make a company reach its target audience. Investigations also showed that there is little advertisement on various media (Television, Radio, etc.) by MTN Ghana telecommunication company.

Figure 8:Are you still a user of MTN Mobile Money



Source: Researcher's field survey (2017)

The information collected in *Figure 8* brings out those who are still users of MTN mobile money and those who have stopped using the services. 98 users out of 135 are still using the services that constitute 73%. 27% have stopped using the services, which amounts to 37 users.

Therefore, it could be seen that most of the respondents are still users of the MTN Mobile Money but this does not take out the fact that some users are still putting a stop to the use of the services. This is what MTN Ghana needs to research on to know the reason why people continue to drop out in using this innovative service even though MTN Ghana continues to also have new users on board for the use of mobile payments. A further analysis is done below to ascertain the number of males and females who have stopped or are still using the service. This analysis is done on those who are still and not users of the mobile pay.

Table 6.1.1 Cross tabulation between Gender of respondents and are you still a user of MTN mobile money

Gender of respondents * Are you still a user of MTN Mobile Money Cross tabulation					
			Are you still a user of MTN Mobile Money		Total
			Yes	No	
Gender of respondents	Male	Count	45	33	78
		Expected Count	56.6	21.4	78.0
	Female	Count	53	4	57
		Expected Count	41.4	15.6	57.0
Total		Count	98	37	135
		Expected Count	98.0	37.0	135.0

Source: Researcher's field survey (2017)

Table 6.1.1 shows that 33 users who are males have stopped using the service and 4 users who are also females have stopped using the service. Therefore, it could be seen that 45 users who are males are still using mobile pay and 53 users who are also females still use the services. The researcher can therefore say that the females have a huge number in using the service as compared to the males. However, the chi-square between "*gender of respondents"* and "*are you still a user of MTN money"* was calculated for. The chi-square table can be found in appendix 2 (refer to table 6.1.2 at appendix 2). The revelation is that the gender of males is highly dependent on those who are and are not using the service. The probability value is <0.01, degree of freedom (df) is 1, the chi-square value is 20.615.

6.5.1 Reasons behind stopping the use of Mobile Pay

This was an open-ended question where users were given the privilege to give reasons as to why they have stopped using the services and subsequently indicate what they are using now to transfer or transact money payments. The answers were input in Excel and patterns were found within them and these were used in creating variables in SPSS to help with the analysis. This question is only for the 37 users who have stopped using the service. Below is the statistics.

Table 6.2 Reasons behind stopping the use of Mobile Pay

Why did you stop using the MTN Mobile Money?				
		Frequency	Valid Percent	Cumulative Percent
Valid	Transaction cost unbearable	23	62.2	62.2
	No more business with it	1	2.7	64.9
	No more using the network	5	13.5	78.4
	Amount to cash out	4	10.8	89.2
	Network problems	4	10.8	100.0
	Total	37	100.0	

Source: Researcher's field survey (2017)

These reasons found in Table 6.2 are the reasons why there are flashbacks in the use of mobile pay and these are according to users or the respondents engaged in answering the questionnaire. These users based on the above reasons to stop using the service and move to their previous ways of sending and receiving money or making payment. 62.2% believe that the transaction cost is unbearable and has caused them to stop using the service and 10.8% each also affiliated their stoppage of the service to the limit on the amount of cash out, and the network problem. However, 13.5% said that they are no more using the network which means they have switch to a different network. Only 2.7% indicated that there is no more business activity with the service. This situation, they bemoaned, is the cause of their stoppage of the use of mobile money service. It is gratifying to also note that

Emma, personal communication (January 2017) who happens to be a territorial manager of MTN said that he has seen that some users are dropping out and when asked why, most of them affiliate it to the cost involve with transactions and network delays. This affirms what was found on the field.

In as much as this innovative service or the advent of mobile pay is supposed to provide convenient and easy way of making various transactions, it is clear some users are also having problems with the service thereby causing them to stop using it. Things were not initially like this when it was piloted, and the business model of MMS has evolved with time. These users (those who have stopped) may be classified as one target market whereby the decisions now do not favour them in any way. As Kotler (1994) said, market targeting entails some major commitments to satisfying the needs of specific customer groups through the development of specific capabilities and investment in dedicated resources. With this statement, the researcher can therefore conclude that these decisions and actions of MTN are targeted at their various market segments but these same decisions are affecting some users of their service who may be found on a different segment causing negative consequences. Investigations revealed that most of these are unforeseen threats that MTN Ghana is not considering to be of a threat to their business model or viability of the business but they serve as a "threat dimension". Carton et al. (2012) contends that unforeseen threats are more likely to occur especially in the emerging and young mobile payments market with its uncertainties and peculiarities.

6.5.2 Indicate what medium you use for transactions now

This question was asked and answered by those who have stopped using the MTN mobile money service. Those respondents were asked to indicate what they use now in making various payments. The statistics follows.

Table 6.3 What mode of transaction are you using now?

What mode of transaction are you using now?				
		Frequency	Valid Percent	Cumulative Percent
Valid	Bank	14	37.8	37.8
	Through Someone	13	35.1	73.0
	Transport	10	27.0	100.0
	Total	37	100.0	

Source: Researcher's field survey (2017)

Table 6.3 shows the medium by which those who have stopped using the service use in making payments. 37.8% represents the majority who are using the *bank* for their transactions and 35.1% users use *someone* in making such transactions. However, 27% prefer to use the *transport* in making such transactions. Therefore, the researcher can conclude that these people are now using these (transport, through someone, and bank) to make various transactions. These were what most people were using before the advent of mobile money which had a lot of

insecurities and risks. The mobile money came to provide secure and convenient way of doing these things but unfortunately some users have stopped to use it.

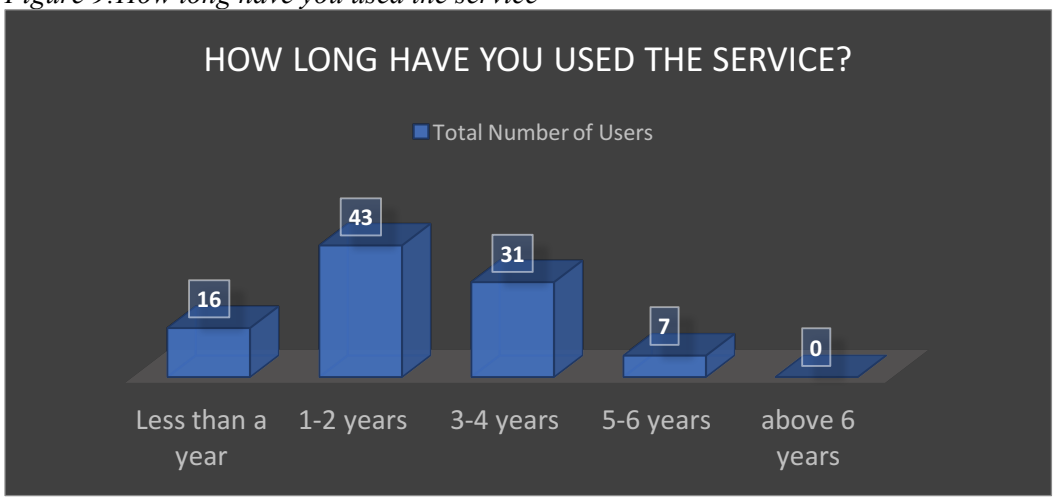
6.6 General assessment of MTN Mobile Money

On this conjecture, the researcher assesses the advent and the current use of MMS by engaging users in a series of questions. Some of these questions have already been answered previously to this sub topic but a lot more will be assessed here as well. These questions make us understand how the advent of MMS is being taken or being received on the market and how far has it achieved its objectives as to why it was brought into the country.

6.6.1 How long have you been using MTN Mobile Money?

The researcher wanted to find out how long users have been using the service since its invention in Ghana. The results have been elaborated in the graph below.

Figure 9:How long have you used the service



Source: Researcher's field survey (2017)

Figure 9 indicates the number of years' users have been using the MTN Mobile Money. This figure only considers those who are still using the service (98 users) and do not consider those who have stopped or have not used the service before. For the past 6 years, the total number of users has increased massively as indicated on the table and this is based on fieldwork conducted. 43 users representing majority of them indicated that they have used the service for the past 1-2 years. 31 users specified that they have used the service for 3-4 years. 16 users have used the service less than a year and this is the third largest on the table. The least of these all are those (7 users) who have used the service for 5-6 years. None of the users indicated above 6 years. According to Emma, (personal communication, January 2017), there were a whole of lot of problems as MTN begun to roll out the mobile pay to its users but people have come to embrace the idea and are patronizing it in and the management of MTN mobile money is doing their very best to solve those problems.

However, Tobbin and Kowornu (2011) in knowing the adoption pattern of the mobile money service in Ghana

asserted that out of 93% of their respondents have heard of MTN Mobile Money Transfer but indicated that just 10% claim to have used the service and this assertion could be debunked by this research. It could be seen that there continue to be a rise of the usage of MTN mobile money for the past 6 years. Thus, the researcher has seen an increase of 66.67% as compared to then 10% in 2011 based on the respondents. This increase in adoption rate can be affiliated to a whole lot of factors and this would be assessed below. Next on the index is the value map in setting up the business model for MTN mobile money

6.6.2 Assessing the Value Map of MTN Mobile Money

Business models are known to represent creation of value (Amitt and Zott, 2001) as well as value and cost (Stabell & Fjeldstad, 1998). The researcher assessed what value is being created by the MTN company to users and what users also see as value in this case be using the service. Emma, (personal communication, January 2017), posits the following to be values being created by MTN Mobile and this can be found out in the vision for the mobile payment; "*MTN Mobile money is a fast, simple, convenient, secure and affordable way of transferring money, making payments and doing other transactions using a phone*". The users were asked series of questions to ascertain the values mobile pay creates for them, and these questions were set with the help of MTN management. The following questions were asked

1) Why did you choose to sign up for MTN's Mobile Money Service?
2) What benefits do you get from using MTN mobile money payments?
3) Why did you choose to perform these activities with MTN Mobile Money Services?

The three questions above were open ended questions and the answers were input into Excel and pattern were found in the answers which helped in creating variables in SPSS. The findings have been elaborated in tables below.

Table 6.4 Reasons behind signing up for MTN Mobile Money

Why did you choose to sign up for MTN's Mobile Money?				
		Frequency	Valid Percent	Cumulative Percent
Valid	Is Convenient	16	16.3	16.3
	Easily accessible	29	29.6	45.9
	Interest to be received	3	3.1	49.0
	To help run my business	1	1.0	50.0
	It's fast	8	8.2	58.2
	The network used	10	10.2	68.4
	Send and receive money	15	15.3	83.7
	Is reliable	5	5.1	88.8
	For easy transactions	10	10.2	99.0
	Affordability	1	1.0	100.0
	Total	98	100.0	

Source: Researcher's field survey (2017)

Table 6.4 elucidates the reasons behind why users sign up for MTN mobile pay. 29.6% which represents majority of the users said they signed up for it because is easily accessible and 16.3% advocated their sign up to its convenience. 1% each said because of its affordability, and to help run his business. Also, 10% each said their sign up is because it's the network they use and for easy transactions. A further 15% affiliated signing up to sending and receiving money. Again, 5.1% and 3.1% indicated that is reliable and interest to be received respectively. Lastly, 8% believe is fast thereby making them sign up for it. The penultimate indicator of signing up by users is the accessibility of mobile pay. Thus, majority of the users think is accessible that is why they signed up for the mobile services. This is an interesting revelation as it shows the reasons behind signing up for MTN Mobile money. MTN can view this to be a value to the users of their service.

Table 6.5 What benefits do you get from using MTN Mobile money payments/services?

What benefits do you get from using MTN Mobile Money Services?				
		Frequency	Valid Percent	Cumulative Percent
Valid	Saves time	31	31.6	31.6
	None	32	32.7	64.3
	Interest	8	8.2	72.4
	Easy to transact	19	19.4	91.8
	Free airtime	5	5.1	96.9
	Convenient	2	2.0	99.0
	Helped business	1	1.0	100.0
	Total	98	100.0	

Source: Researcher's field survey (2017)

In response to my questionnaire in finding out the benefits users derive from using the mobile money; Table 6.5 illustrates that. Out of the 98 users, 31.6% users believe that mobile money helps them save time and 19.4% said it helps them to easily transact business (like sending and receiving money, making payments). Again, 8.2% acknowledge it interest on mobile money and 5.1% benefits with free airtime. 2% users advocated their benefits to the convenient in using the service. However, 32.7% representing the majority said they get *no* benefit from using the service.

Therefore, it can be concluded that majority of the users do not get any benefit from using the service. Investigations revealed that most of the users based on the reasons to registering for mobile pay to continue to use the service and not what they get (benefit) from it. However, there are similarities between the answers given above the two tables (benefits and reasons behind registering for mobile pay). This can be that some users view *reasons for signing up* as their *benefits* and vice versa.

Table 6.6 Why did you choose to perform various activities with Mobile money services?

Why did you choose to perform your various activities with MTN Mobile Money Services?				
		Frequency	Valid Percent	Cumulative Percent
Valid	Convenient	27	27.6	27.6
	Easily accessible	32	32.7	60.2
	Safe and secured	4	4.1	64.3
	Interest	1	1.0	65.3
	Reliable	1	1.0	66.3
	Fast	15	15.3	81.6
	Saves times	8	8.2	89.8
	For easy transactions	10	10.2	100.0
	Total	98	100.0	

Source: Researcher's field survey (2017)

It is surprising to note that most of the answers given by users have already been given under the previous questions found under "*value*" and or "*benefits"*. 32.7% said they chose to use MTN mobile money because it is easily accessible as you can get it anywhere and 27.6% thinks is convenient that is their main reason for performing the activities with it. A further 15.3% and 10.2% chose that because is fast and easy to transact respectively. Again, 8.2% chose it because it saves time and 1% each attributed it to reliability and interest. Only 4% thought of safety and security.

Therefore, the researcher can conclude that majority of the users use MTN mobile money because is easily accessible and can be located at anywhere even at remote areas or hinterlands. This draws a lot of people to use it for their transactions. Also, the researcher cannot ignore the fact that other users also use it based on different other reasons like the ones stated in the table above.

In conclusion from the three tables under *Value*, the researcher can say that the management of MTN Ghana is creating value for its customers as well as creating value for the company. It could be seen that there are a lot of similarities as to the value MTN Ghana intends to create and what values customers are also gaining from this advent. Osterwalder et al (2014) asserts that value proposition needs to have a *fit* between the value map and the customer profile. They went on to say that you achieve "*Fit*" when your value map meets your customers' profile. It could be seen from the results that the services (mobile money) being offered "produce pain relievers and gain creators that match one or more of the pain and gains that are important to the customer" (Osterwalder et al 2014). For instance, customers pain of having to move extra miles to make transactions is met by MMS providing them with easily accessible agents or merchants everywhere (classify as pain reliever).

The researcher will therefore move on to examine cost services (cost of transactions) in the business model as well

as talk about the threat dimension in the cost of transactions which is affecting users of mobile pay causing users to desist from the use of mobile pay.

6.7 Examining the Cost Structure of MMS

This part talks about the costs incurred to operate a business model and this affects the cost of transacting business on mobile money. The researcher focused on the cost of transactions when using mobile money and the consequences it might have on various users. As it has already been laid above that some users are stopping the usage of mobile money services because of the transaction cost which is unbearable to them. The researcher wanted to find out what the current users of the mobile money service also think but first it is necessary to know what the cost of transactions are. The next table captures the costs of transactions for MTN Mobile money:

Table 6.7 Cost Structure at various points

Transaction Point	Services	Transaction Limit (GH)	Charges
At Merchant	Registration		Free
	Money Transfer (C2C)	1 – 50	2.50
		More than 50	5%
	Cash In	Minimum of GH	Free
	Cash Out	1 – 50	0.50
		Above 50	1%
On your Mobile Wallet	Money Transfer (P2P)	1 – 50	0.50
		More than 50	1%
	Money Transfer (A2P)	1 – 50	1.50
		More than 50	3%
	Airtime Top-up	1 – 100	Free
	Bill Payments – ECG	N/A	0.50 flat
	Bill Payments - DStv	N/A	Free
Account Management	Balance enquiry	N/A	Free
	Mini Statement	N/A	0.01

Source: Researcher's field survey (2017)

Table 6.7 clearly states the cost structure for various transactions using MTN Mobile pay. Also, it considers the transaction point. It is gratifying to note that some bill payments are free to make like paying your bills for DSTV and checking your balance too is free.

Table 6.8 MTN Mobile Money Charges are affordable

MTN mobile money charges are affordable				
		Frequency	Valid Percent	Cumulative Percent
Valid	Strongly disagree	19	19.4	19.4
	Disagree	21	21.4	40.8
	Neither agree/disagree	6	6.1	46.9
	Agree	38	38.8	85.7
	Strongly agree	14	14.3	100.0
	Total	98	100.0	

Source: Researcher's field survey (2017)

Table 6.8 communicates the results obtained, 38.8% users *agree* that MTN Mobile Money charges are affordable and 14.3% *strongly agree* that the charges are affordable. Only 6.1% users "*neither agree or disagree*" to the statement. A further 21.4% disagreed with the statement while 19.4% strongly disagree with the statement. Thus, in terms of disagreeing, 40.8% disagree with the statement. They believe the statement "MTN Mobile money charges are affordable" is not true.

Thus, it could be said that some users also think the charges are not affordable, and this made MTN lose some of their customers. This can be classified as a threat to the viability of the business model and this could be put under *threat dimension* of Antero et al. (2013). Antero et al. (2013) proclaim that the "threat" dimension portrays the possible and profound threats that may jeopardize the economic viability of a business model of mobile payment. The cost transaction seems to be unbearable making some users drop out in using the MMS and this is classified as a "*threat dimension"* threating the viability of the company as well as the business model.

Table 6.8.1Report of Mean, standard deviation and median

Report						
MTN mobile money charges are affordable?						
Gender of respondents	N	Mean	Std. Deviation	Minimum	Maximum	Median
Male	45	3.22	1.363	Strongly disagree	Strongly agree	4.00
Female	53	2.94	1.433	Strongly disagree	Strongly agree	3.00
Total	98	3.07	1.401	Strongly disagree	Strongly agree	4.00

Source: Researcher's field survey (2017)

To check the measure of spread of the responses, the mean, median and standard deviation were calculated. Table 6.7.1 shows that, the males had a mean of 3.22 and a standard deviation of 1.363. Meanwhile the females had a

standard deviation of 1.433 and mean value of 2.94. This means that the results are closely clustered around the mean. Therefore, the researcher can conclude that since there is not much difference between the mean and the standard deviation for both males and females, there is not much notable difference between the distributions of this type of agreement from respondents.

6.8 Assessing the usage of MTN Mobile Money

In the quest to find out and assess what users use the mobile money for, and comparing it to how they used to perform these same activities or transactions prior to the advent of MMS; Questions were developed in close collaboration with the staff at MTN Ghana. The questions are as follows:

1) What do you use the Mobile Money Service for?
2) How did you perform these same transactions or activities in the past?

6.8.1 What do you use the Mobile Money Service for?

There were 7 options for users to choose from or preferably choose as many as they use the service for. These options are based on the pop up option one receives upon dialing the code for mobile money service (i.e. *170#). The statistics would combine all the options showing how users ticked which will be referred as "multiple response for use of Mobile Money". Some users ticked two and more, and some others too indicated just for one. The findings and analysis below.

Table 6.9 What do you use the Mobile Money Service for? (Multiple responses)

Uses of Mobile Money Frequencies				
		Responses		Percent of Cases
		N	Percent	
What do you use the Mobile Money Service for[a]	For payments	36	11.8%	36.7%
	Sending and receiving money	93	30.5%	94.9%
	Buy Airtime	68	22.3%	69.4%
	Checking Wallet	41	13.4%	41.8%
	Banking Service (transfer to or from a bank)	11	3.6%	11.2%
	Buying Internet Bundles	48	15.7%	49.0%
	Savings and Loans	8	2.6%	8.2%
Total		305	100.0%	311.2%
a. Dichotomy group tabulated at value 1.				

Source: Researcher's field survey (2017)

From table 6.9, 94.9% use the mobile money service to *send and receive money*, which represents the ticked option by majority. 69.4% users mostly prefer to *buy airtime* with MMS, which represents the second largest usage of the MMS. 15.7% users use MMS to buy *internet bundles* which is to be used on their phone or bought for others

on a different number but the same network. 41.8% checks their balance (i.e. checking their wallet) with the service and 36.7% use the MMS to make payments. 8.2% use MMS for *Savings and Loans*. 11.2% use MMS for banking service that is transferring to or from a bank. The result in Table 6.9 is only applicable to those who still use the MMS, which totaled 98 users of those who answered the questionnaire.

The results show that all the options provided by MTN are being used for on the MMS and that all the users have one or two uses for the service but majority of the users *send and receive money* with their mobile money wallet through MMS. The least usage of the MMS is the "*Savings and Loans*" which recorded just 8 people ticking that option. Therefore, the researcher can conclude that most users having the mobile money wallet mostly use MMS to *send and receive money* from families, friends, creditors, debtors and likes but this does not take out the fact that there are other uses of MMS which are being explored by various users.

6.8.2 How did you perform the same transactions or activities in the past?

This part allows users to indicate what or how they used to perform these same activities (sending and receiving money, making payments, buying internet bundles, and the likes) in the past. Users were provided with options (by transport, by bank, sending through a person, and other, please specify) prior to the advent of MMS, which allowed them to select or indicate the ones that are applicable to them. Some users indicated multiple selections, which calls for multiple responses. Statistics will be shown for the multiple responses, and analysis will follow suit.

Table 6.10 Performing transactions or activities in the past (Multiple Responses)

Performing transactions in the past Frequencies				
		Responses		Percent of Cases
		N	Percent	
How did you perform the same transactions or activities in the past?[a]	By transport	34	21.9%	34.7%
	By Bank	49	31.6%	50.0%
	Delivery Services (eg. Postal services)	13	8.4%	13.3%
	Through Someone	58	37.4%	59.2%
	Other (specified)	1	0.6%	1.0%
Total		155	100.0%	158.2%
a. Dichotomy group tabulated at value 1.				

Source: Researcher's field survey (2017)

The researcher tried to found out how the functions on the MMS were performed in the past. Table 6.10 reveals the results received on the field. Most of them representing majority of the users indicated that they did this "*through someone*", and this constituted 59.2% representing 58 users. This followed up by 49 users which amounts to 50% of the users did that through the "*bank"* in the past. 34.7% out of the 98 users indicated that they performed

these transactions "*by transport*" in the past. 13 users representing 13.3% also said they used to use the "delivery services" (eg. Postal order) before they started with MMS. 1 user representing 0.6% specified something different that did not appear on the options given to choose from so the user ended ticking other and specifying afterwards. The user indicated he used to use Vodafone cash in making such transactions.

The results (part of it) confirm what Tobbin (2010) asserted about remittance in Ghana back then. The "transport" and "through someone" confirms what Tobbin found on the field which he indicated that the main methods of remitting being the bus driver in Ghana and went ahead to also indicate people rely on other friends or families (through someone) in sending monies to families and friends. Therefore, the researcher can say that before the advent of MMS, most people preferred to use other people (through someone) in remitting monies to families and friends. Thus, the researcher concludes that, there have been archaic medium (through someone, by transport, etc.) of remitting money in Ghana before the advent of Mobile payments. Even though there was "bank" back then, most people still preferred to use "someone" or to use "transport" in remitting monies, which had a lot of challenges and consequences, associated with it. The bank is not well utilized by users for various uses or functions it proffers.

6.9 Assessing the convenient and satisfaction of using MMS

This part conveys how users are satisfied and convenient with using this service. There were two questions in all, which had a likert scale options to choose from. The questions are below

1) How convenient are you using your MTN Mobile Money compared to your old way of performing the same transactions?
2) How satisfied are you with using MTN Mobile money?

6.9.1 How convenient are you using your MTN Mobile Money compared to your old way of performing the same transactions?

The researcher wanted to find out how convenient or inconvenient is it with using MMS compared to the previous ways of performing the same transactions by users. Users were given the option to answer this on a scale of 1-5 where 1 indicated very inconvenient and 5 indicating extremely convenient. Below are the statistics resulting from the answers given by users'.

Table 6.11 Comparing MMS with the previous way of activities

How convenient or inconvenient is it in using MMM as compared to the old way				
		Frequency	Valid Percent	Cumulative Percent
Valid	Very inconvenient	3	3.1	3.1
	Inconvenient	3	3.1	6.1
	Convenient	43	43.9	50.0
	Very convenient	31	31.6	81.6
	Extremely convenient	18	18.4	100.0
	Total	98	100.0	

Source: Researcher's field survey (2017)

Table 6.11 shows that 92 users out of 98 are convenient with the service as compared to their previous way of such transactions. This represents 93.9%. 43.9% representing majority of the users indicated that they are "convenient" with the service. 31.6% users indicated that they are "*very convenient*" with the service and 18.4% also shows how some users are *extremely convenient* with MMS as compared to their old ways of performing same transactions.

However, some users also indicated their "*inconvenient*" in the service. 3.1% users each made the researcher aware that they are "very inconvenient" and "inconvenient" in using the service compared to their previous way of performing such transactions. Thus, the researcher can make a conclusion that majority of the users of MMS feel convenient in using the service as compared to the previous way of performing such transactions. Investigations made revealed that users enjoy e-payment because is done at their convenience throughout the comfort of their homes, offices, etc. Appiah et al. (2014) contend that e-payments are convenient to make transactions because it allows users at the convenience of their offices, homes to access and make transactions on their account without difficulty. They again said it helps to save time and accurate. Therefore, the researcher concludes that MMS is convenient to use.

Table 6.11.1 Report on Mean, Standard deviation and median

Report						
Indicate your convenient or inconvenient in using MMS as compared to the old way						
Gender of respondents	N	Mean	Std. Deviation	Minimum	Maximum	Median
Male	45	3.69	1.019	Very inconvenient	Extremely convenient	4.00
Female	53	3.51	.846	Very inconvenient	Extremely convenient	3.00
Total	98	3.59	.929	Very inconvenient	Extremely convenient	3.50

Source: Researcher's field survey (2017)

In checking the measure of spread of the responses received; the mean, median and standard deviation were calculated. Table 6.11.1shows that, the males had a mean of 3.69 and a standard deviation of 1.019. Meanwhile the females had a standard deviation of 0.846 and mean value of 3.51. This means that the results for both genders are closely clustered around the mean. Therefore, the researcher can conclude that since there is not much difference between the mean and the standard deviation for both males and females, there is not much notable difference between the distributions of this type of agreement. However, the distribution is negatively skewed as the scores fall toward the higher side.

6.9.2 Satisfaction with using MTN Mobile Money Service

In a way of finding how satisfied or dissatisfied customers are, the researcher developed this question on a scale of 1-5 where 1 being very dissatisfied and 5 extremely satisfied. The statistics shown on the next page.

Table 6.12 Users' satisfaction or dissection with MTN Mobile Money

Users' Satisfaction or Dissatisfaction of MMS				
		Frequency	Valid Percent	Cumulative Percent
Valid	Very dissatisfied	1	1.0	1.0
	Dissatisfied	2	2.0	3.1
	Satisfied	52	53.1	56.1
	Very Satisfied	24	24.5	80.6
	Extremely satisfied	19	19.4	100.0
	Total	98	100.0	

Source: Researcher's field survey (2017)

From table 6.12, 3 users indicated their dissatisfaction in using MTN mobile money service. 2 of them point out that they are "*dissatisfied*" while the other 1 showed a "*very dissatisfaction*" in the service. 95 users representing the majority are satisfied with the service. 53.1% showed that they are *satisfied*, 24 users indicated that they are "*very satisfied*, and 19.4% representing 19 users designate that they are "*extremely satisfied*" with the service. Thus, the results show how satisfied users are with MTN Mobile Money service. Therefore, the researcher can conclude that MTN mobile money brings satisfaction to its customers.

Table 6.12.1 Report on Users' satisfaction and dissatisfaction of MMS

Report						
Users' Satisfaction or Dissatisfaction of MMS						
Gender of respondents	N	Mean	Std. Deviation	Minimum	Maximum	Median
Male	45	3.62	.960	Very dissatisfied	Extremely satisfied	3.00
Female	53	3.57	.772	Dissatisfied	Extremely satisfied	3.00
Total	98	3.59	.860	Very dissatisfied	Extremely satisfied	3.00

Source: Researcher's field survey (2017)

In checking the measure of spread of the responses received; the mean, median and standard deviation were calculated. Table 6.12.1 shows that, the males had a mean of 3.62 and a standard deviation of 0.960. Meanwhile the female had a standard deviation of 0.772 and mean value of 3.57. This means that the results for both genders are closely clustered around the mean.

Therefore, the researcher can conclude that since there is not much difference between the mean and the standard deviation for both males and females, there is not much notable difference between the distributions of this type of agreement. However, the distribution is positively skewed, as the extreme scores are larger and the mean is also larger than the median.

6.9.3 Do you plan to use MTN Mobile money service or another medium for transactions for the next month?

This question was asked to ascertain if people would switch to another medium to perform various transactions on in the coming months. This was necessary because the researcher wanted to be sure that in assessing the users are still going to use this service for the next month. There were four options for users to choose from. Statistics are below.

Table 6.13 Plan to use MTN Mobile Money Service or another medium

Plan to use MMS or another medium for transactions				
		Frequency	Valid Percent	Cumulative Percent
Valid	Yes, Mtn Mobile Money	81	82.7	82.7
	No	14	14.3	96.9
	Bank	2	2.0	99.0
	Other Mobile Banking Service	1	1.0	100.0
	Total	98	100.0	

Source: Researcher's field survey (2017)

The results in Table 6.13 stipulates that a handful of users which represents 14.3% are not going to use the service for the next 24 months. 82.7% shows their continuous interest in the service and are going to use the service for the next 24 months. This constitutes the majority. 2% are going to switch to using the bank for their transactions and 1% of them indicated a switch to a different a network provider (Vodafone Cash) to be used for the next 24 months. Thus, the researcher concludes that because majority of the users have satisfaction and are convenient in using service; they will continue to use the service for the next 24 months.

6.10 Examining Users relationship with banks

The researcher wanted to know the relationship users have with banks and why those who have do not use the bank for their activities or transactions. In so doing, the researcher found out the number of users who have bank accounts and those who do not have bank accounts. Again, reasons were also given as to why users who have accounts with banks do not use the bank for their transactions. Three questions were developed under this part and below are the questions and the results follow right after.

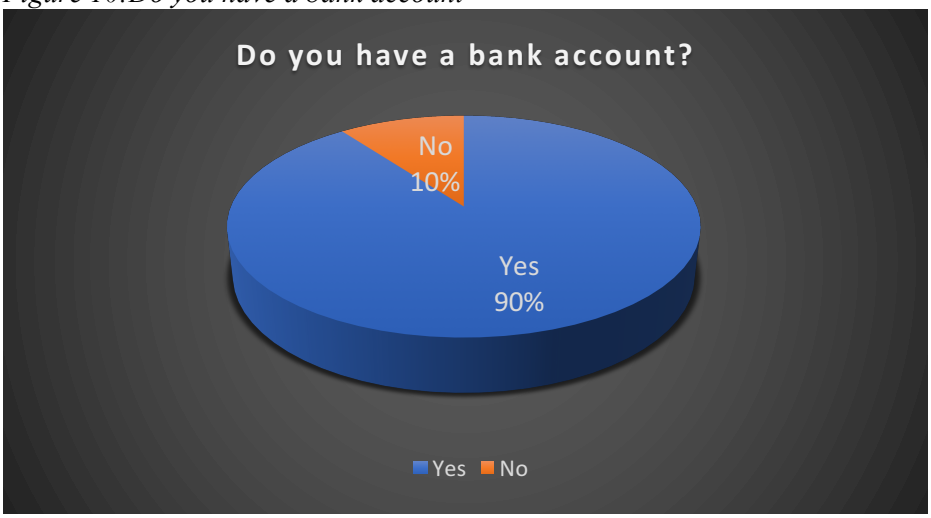
1) Do you have a bank account?
2) If No, why don't you have a bank account (those who answered NO)?
3) Why don't you use the bank for your transactions (those who answered Yes)

6.10.1 Owning a bank account

The researcher wanted to find out if users operate a bank account or not, that is, if they are having bank accounts or not. Thus, this question was set in the questionnaire to be ascertain the number of users who operate bank

accounts and those who do not. The findings follow;

Figure 10:Do you have a bank account



Source: Researcher's field survey (2017)

Mobile money users specified whether they have a bank account or not. Figure 10 communicates the results obtained on the field. 88 users out of a total 98 users have a bank account, which took 89.8% constituting majority of them. However, 10.2% users showed that they do not have or operate a bank account.

Thus, it could be said that financial inclusion has helped these 10 users to gain assess in making cash transactions and the other services mobile money service offers. Without the advent of MMS in Ghana, these 10 people would have not had access to services offered financially since they do not operate a bank account. Therefore, the researcher deduced that majority of the users have bank accounts but they find it convenient in using MTN Mobile money services for their activities.

Table 6.14 Cross tabulation between gender of respondents and owning a bank account

Gender of respondents * Owning a bank account Cross tabulation					
			Owning a bank account		Total
			Yes	No	
Gender of respondents	Male	Count	40	5	45
		Expected Count	40.4	4.6	45.0
	Female	Count	48	5	53
		Expected Count	47.6	5.4	53.0
Total		Count	88	10	98
		Expected Count	88.0	10.0	98.0

Source: Researcher's field survey (2017)

The cross tabulation of *users' gender* and *owning a bank account* was further analysed (Table 6.14). 48 users representing females have a bank account and 5 users also females had no bank account. 40 users representing males have a bank account. A further 5 users of males do not have a bank account. The females had majority of users who operate a bank account.

However, the Chi-square (see appendix 2; table 6.12.1) shows that the researcher has violated the assumption (since there is 25% that have expected count less than 5) and there is not an association or significance between gender and those who operate and do not operate bank account. The values recorded are as follows; Chi-square value = 0.75, df = 1, $p > 0.05$. Therefore, the result is not significant, and the researcher accepts the null hypothesis. Thus, owning a bank account is completely independent from one's gender in this study.

6.10.2 Reasons behind not owing a bank account

This question demanded multiple answers if it applies to the user so the analysis was done on the multiple response table. This is only applicable to the 10 users who do not have bank accounts.

Table 6.15 Reasons behind not owing a bank account (Multiple Responses)

Reason for not having a bank account Frequencies				
		Responses		Percent of Cases
		N	Percent	
Why do you not have a bank account?[a]	The minimum balances are too high	1	8.3%	10.0%
	No bank is conveniently close to me	2	16.7%	20.0%
	Bank fees and service charges are too high	3	25.0%	30.0%
	Reason for not having a bank account - Other	1	8.3%	10.0%
	Reason for not having a bank account - Prefer not to answer	5	41.7%	50.0%
Total		12	100.0%	120.0%
a. Dichotomy group tabulated at value 1.				

Source: Researcher's field survey (2017)

Users who do not have a bank account were asked to notify their reasons behind not having a bank account and this has been tabulated in Table 6.15. The researcher provided a lot of options to choose from and provided them with the chance of also indicating their own reason if it is not part of the options given. 50% of the users "prefer not to answer" the question based on reasons best known to them. 16.7% of the users complained about the bank fees and service charges being too high and 20% representing 2 users answered that no bank is conveniently close to them. 10% each of the users, which represents 1 user, answered that the minimum balances are too high and other (claiming that she will open a bank account but not now).

Therefore, the researcher concludes that reasons varies a lot when it comes to why people do not operate a bank account ranging from banks not being close to them to bank charges and fees being too high. These factors have

turned to push most people away from operating a bank account and hence the use of mobile money service.

6.10.3 Why don't you use the bank for your transactions?

This was a follow up question to those users who have bank account but do not use it for their transactions. The question had three options for users to choose from and this part of the question is only applicable to the users who operate bank accounts, that is the 88 users.

Table 6.16 Reasons for not using the bank for the transactions

Reason for not using the bank for the transactions				
		Frequency	Valid Percent	Cumulative Percent
Valid	Too costly to use	16	18.2	18.2
	A lot of charges associated with transactions	27	30.7	48.9
	Other (Specified)	45	51.1	100.0
	Total	88	100.0	

Source: Researcher's field survey (2017)

From Table 6.16, the reasons behind why users do not use the bank for their transactions have been laid down. Upon the options given, most users indicated "*other*" and specified their reason beside it and this represented 45 users. 51.1% representing majority had that option (other). 27 users, which represent 30.3%, indicated that there are *several charges associated with such transactions* and 18.2% of users indicated that it is "*too costly to use*".

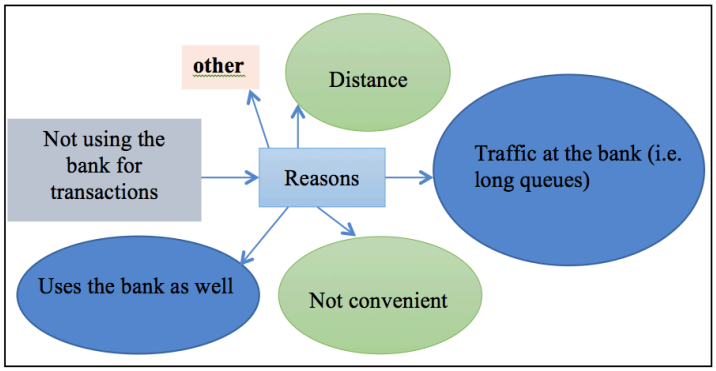
Therefore, it could be seen that users do not have interest in using the bank because of the several reasons that are being hindrances to using it for the various transactions. MTN mobile money has been a tremendous help to all these people for a fast and convenient way of making specific transactions. The various reasons derived from "other" have been elaborated in the table and figure below because patterns were found within the answers provided by users, and this relates to the 45 users who ticked "option". The table below exhibits the answers derived from those who the option "*other*" chosen.

Table 6.16.1Reasons for not using the bank for various transactions

Reasons	**Number**	**Percentage**
Distance	29	64.44%
Traffic at the bank	11	24.44%
Not convenient	4	8.9%
Uses the bank as well	1	2.22%
Total	45	100%

Source: Researcher's field survey (2017)

Figure 11:Why users do not use bank for their transactions



Source: Researcher's field survey (2017)

6.11 Assessing Users' preference of Mobile Money to other mode of transaction

The researcher wanted to find out how far has the advent of mobile money in the country since 2009 bridge the gap between those who have access to ATM, Bank service and e-ZWICH to those who do not. Also, the researcher wanted to know how far it has gone with helping provide a cashless system in the country. The question was set for users to indicate their level of preference for each of those services and to see if indeed the advent of MTN mobile money is making ways in the country. Statistics have been shown in the table below.

Table 6.17 Level of Preference for various mode of transactions

Services	Least Preferred		Less Preferred		Neutral/Unknown		Preferred		Most Preferred	
1) Mobile Money Service	-	-	*2*	**2%**	*2*	**2%**	*38*	**38.8%**	*56*	**57.1%**
2) Bank Service	*8*	**8.2%**	*30*	**30.6%**	*15*	**15.3%**	*32*	**32.7%**	*13*	**13.3%**
3) ATM Service	*11*	**11.2%**	*16*	**16.3%**	*5*	**5.1%**	*39*	**39.8%**	*27*	**27.6%**
4) e-ZWICH	*56*	**57.1%**	*19*	**19.4%**	*14*	**14.4%**	*9*	**9.2%**	-	-

Source: Researcher's field survey (2017)

The results in the table elucidate users level of preference for each of the services stated above. 57.1% of the users most preferred to use Mobile money compared to the other services and 38.8% preferred to use mobile money. 2% users were neutral or unknown as to their preference and another 2% indicated that they less preferred the Mobile Money to the other services. None of the users ticked least preferred. Thus, 95.9%, which represents majority users, prefer to use mobile money service compared to the other mode of services.

For Bank Service, 13.3% users "most preferred" to use the bank for their transactions and 32.7% "preferred".

Therefore, in terms of predilection, 46% prefer to use the services of the bank for their transactions as compared to the other services. 30.6% of the users less preferred to use the bank for their transactions and 8.2% of the users "least preferred". A further 15.3% were neutral or unknown to the service in terms of their preference.

In terms of proclivity for ATM services, 27.6% and 39.8% showed their preference for "most preferred" and "preferred" respectively making a total of 67.4%. Again, 16.3% users less preferred and 11.2% least preferred to use this service. 5.1% users were neutral to this service in terms of preference.

e-ZWICH had the great number of users who less and least preferred the service. This number totaled 75 that represents 76.5%. 57.1% users "*least preferred*" the service and 19.4% "*less preferred*". For preference, 9.2% users "*preferred"* to use the service but none of them "*most preferred*" to use the service. Thus, the researcher can conclude that this is a service users most dislike to use.

Therefore, in order of preference, users prefer MTN mobile service representing 95.9%, then ATM service which constituted 67.4%, then bank service which took 46%, and finally e-ZWICH which constitutes 9.3%. When it comes to less and least preferred, 2% for MTN Mobile Money, 38.8% for bank service, 27.5% for ATM, and 76.5% for e-ZWICH. Issahaku (2012) posited that ATM is much preferred over e-ZWICH in the country and this has been confirmed again with this study. Based on the results, users are even willing to use or prefer the bank to e-ZWICH. The researcher can therefore say that e-ZWICH is gradually fading out of the system.

6.11.1 Test Report for level of preference

Further analysis was done and this was done to check the measure of spread for the various preferences (see appendix 3; table 6.14.1). The mean, median and standard deviation were all calculated. Table 6.14.1 (at appendix 3) shows the measure of spread for MMS, Bank services, ATM services, and e-ZWICH services. For mobile money, the male had a mean of 4.56 and a standard deviation of 0.546. Meanwhile the females had a standard deviation of 0.723 and a mean value of 4.47. The results for this are closely clustered around the mean and it could be seen that there is not much difference between the distributions of this type of preference. However, this is negatively skewed where the distribution is asymmetrical and points to the negative direction.

With bank services, the mean for males is 3.47 and the standard deviation is 1.079. The females had a mean of 2.83 and a standard deviation of 1.267. There is not much difference between distributions of this type of preference comparing the mean and the standard deviation for both genders. However, the distribution for the males is negatively skewed and the distribution for the females is positively skewed. Positively skewed because the mean is greater than the median and skewed to the right.

The distribution for ATM transactions is negatively skewed. This means that the distribution for both genders is skewed to the left. The males had a standard deviation of 1.120 and a mean of 3.80 where the females had a mean

of 3.36 and a standard deviation of 1.348. It could also be seen by comparing the mean and the standard deviation of both genders that there is not much differences between distributions of this type of preference and results are closely clustered around the mean.

For e-ZWICH, the females had a mean of 1.76 and a standard deviation of 1.016. The males had a mean of 1.93 and a standard deviation of 1.031. It could be seen that the results are clustered around the mean by comparing the mean and standard deviation for both. However, the females are positively skewed as the mean is greater than the median.

6.12 Examining the Challenges in using MTN Mobile Money

Users were asked to indicate on a likert scale how challenged some various activities posed to them when using MTN Mobile money. These challenges are considered as part of the "threat dimension" (Antero et al. 2013) that poses as a threat to the viability of the service as well as the business model. The users indicated from 1 to 5 where 1 is the least challenge and 5 is the highest challenge. After that, users were asked to put down if they have any other concerns or challenges apart from the stated ones. Below are the statistics.

Table 6.18 Challenges in using MTN Mobile Pay

	1	2	3	4	5
Challenges	Least	Less	High	Very High	Highest
1) MTN network or service stability or availability for transaction to take place	18 18.4%	20 20.4%	24 24.5%	18 18.4%	18 18.4%
2) The amount of money you can conveniently cash out from merchant/agent	24 24.5%	10 10.2%	19 19.4%	19 19.4%	26 26.5%
3) The availability of a merchant close enough to your location at any point in time	47 48%	12 12.2%	16 16.3%	5 5.1%	18 18.4
4) Forgetting your pin	57 58.2%	14 14.3%	12 12.2%	3 3.1%	12 12.2%

Source: Researcher's field survey (2017)

These results obtained from the users in Table 6.18 confirm that there are other challenges which can lead to users dropping out of or that serve as a challenge to the use of MMS. Amankwa and Kevor (2013) asserted that the successes of mobile money service rely on network availability and stability. It is therefore necessary for the management of MTN mobile money to put much more resources to make it the least challenge by users. In the table, it was elucidated that, 18.4% and 20.4% represented least and less challenge respectively for network or service stability. 61.2% is the accumulated figure from high to highest challenge. This posed as a serious challenge, which needs to be tackled because *the success of the MMS lies on the network or service stability* (Amankwa &

Kevor (2013).

The amount of money one can conveniently cash out from a merchant or an agent was another serious challenge as 26.5% of users indicated it being the highest challenge. The least and less challenge constituted 34.7% in total, and from high to highest also amounted to 65.3%. There seems to be no more empirical information about this but the researcher can say that is a greatest challenge to using the service and this tends to push people away from this innovation (mobile money service) in Ghana. Therefore, it could be concluded that this pose as a "*threat dimension"* (Antero et al. 2013) to the success of the invention (i.e. mobile money service).

The availability of a merchant close to a user is not part of the greatest challenges as it recorded a total of 60.2% of users claiming it to be least and less challenge. 18.4% users believe is of the highest challenge and 5.1% showed it to be of a "very high challenge". However, 16.3% of users believe is of "high challenge". Therefore, the researcher can conclude that MTN Ghana is making several efforts to bring merchants or agents to the doorsteps of users where banks are finding it difficult to emulate because huge sums of money is repaired to be deposited at the Bank of Ghana before a branch can be opened.

The least challenge of all the challenges stated is forgetting pin. 58.2% users answered that this is the least challenge and 14.3% said is of less challenge to them. However, 27.5% users indicated from high to the highest challenge.

Table 6.19 Other concerns or challenges in using MMM

Concerns or challenges in using MMS				
		Frequency	Valid Percent	Cumulative Percent
Valid	None	70	71.4	71.4
	Network problems	17	17.3	88.8
	Additional illegal charges by merchant	1	1.0	89.8
	Too much charges on transactions	5	5.1	94.9
	Limit on Cash Out	3	3.1	98.0
	Sending to Unregistered customer	2	2.0	100.0
	Total	98	100.0	

Source: Researcher's field survey (2017)

Table 6.19 was a follow up question to the stated problems where users indicated on a scale of 1-5 how challenged they are that activity in using MMS. It could be seen that 71.4% had nothing more to add up to the statement problems. 5.1% indicated that another challenge they are facing is the cost of transaction and 3.1% acknowledge their dissatisfaction on the limit on cash out option. 17.3% still indicated the dissatisfaction of the network even though it was still part of the stated problems. Only 1% complained about the illegal charges being charged by merchants or agents. A further 3.1% complained about sending money to an unregistered customer. Thus, all these concerns plus the stated ones pose a serious threat to the business model and to the business. Therefore, it can be

concluded that there are threats that are posing as a disadvantage to the use of the mobile payment which is classify as threat dimension (Antero et al. 2013).

6.13 Assessing and examining the frequencies of doing the various activities

In assessing MTN Mobile money, the researcher decided to examine the "*frequency of the use"* engaging in some stated activities from users. Users indicated their frequencies on the activities with a likert scale from 1-5. Below are the frequencies.

Table 6.20 How often do you go to the bank

How often do you go to the bank?				
		Frequency	Valid Percent	Cumulative Percent
Valid	Most frequently	3	3.1	3.1
	Frequently	19	19.4	22.4
	Unknown/Not sure	4	4.1	26.5
	Less frequently	66	67.3	93.9
	Never	6	6.1	100.0
	Total	98	100.0	

Source: Researcher's field survey (2017)

The results in Table 6.20 indicate that, 67.3% of users less frequently visit the bank. However, 6.1% never visits the bank. 3.1% and 19.4% of users visit the bank most frequently and frequently respectively. Thus, 25.5% of users frequently use the bank. Only 4.1% of the users were not sure. Therefore, it can be concluded that people are gradually losing interest in the banks thereby do not frequently visit the bank. This has put the mobile payment on the doorsteps of many. A further analysis (Cross tabulation) was done between *"how often to you go to the bank"* and *"owning a bank account"* to ascertain if there is any dependency between the two variables.

Table 6.21 Cross tabulations between "how often do you go to the bank" and "Owing a bank account

How often do you go to the bank? * Owning a bank account Cross tabulation					
			Owning a bank account		Total
			Yes	No	
How often do you go to the bank?	Never	Count	0	6	6
		Expected Count	5.4	.6	6.0
	Less frequently	Count	62	4	66
		Expected Count	59.3	6.7	66.0
	Unknown/Not sure	Count	4	0	4
		Expected Count	3.6	.4	4.0
	Frequently	Count	19	0	19
		Expected Count	17.1	1.9	19.0
	Most frequently	Count	3	0	3
		Expected Count	2.7	.3	3.0
Total		Count	88	10	98
		Expected Count	88.0	10.0	98.0

Source: Researcher's field survey (2017)

Table 6.21 shows that 62 users who operate bank accounts less frequently visit the bank and and 6 users who do not have a bank account have never visited the bank before. A further analysis (Pearson Chi-Square) was done to ascertain if those owning a bank account are dependent on the frequency of going to the bank. The table (i.e. Table 6.17.2) for the chi-square can be found in appendix 2. The value is 56.991, df is 4, and the p value is 0.00. This indicates that owning a bank is highly dependent on the frequency of going to the bank. There is a 0% chance that this occurred by chance. Therefore, the result is statistically significant since the p value is less than 0.05.

Table 6.22 How often do you use your mobile money?

How often do you use mobile money?				
		Frequency	Valid Percent	Cumulative Percent
Valid	Most frequently	40	40.8	40.8
	Frequently	46	46.9	87.8
	Unknown/Not Sure	2	2.0	89.8
	Less frequently	10	10.2	100.0
	Total	98	100.0	

Source: Researcher's field survey (2017)

It could be seen from the table (Table 6.22) that, 87.7% of users frequently and most frequently use the mobile money service. None of the user has never used the mobile money service. 10.2% of the users have less frequently engage the mobile money service and 2% are not sure of the frequency rate. Thus, conclusion can be made by the researcher that the mobile money is regularly used and comparing it to the frequency of going to the bank. It could be seen that users prefer to use the mobile money service as compared to the bank. This recorded 87.7% as against 25.5% in favour of using the mobile money. The researcher can therefore say that users are getting more comfortable and convenient in using the mobile money.

Table 6.23 How often do you pay your bills with mobile money?

How often do you pay your bills with mobile money?				
		Frequency	Valid Percent	Cumulative Percent
Valid	Most frequently	4	4.1	4.1
	Frequently	25	25.5	29.6
	Unknown/Not sure	4	4.1	33.7
	Less frequently	25	25.5	59.2
	Never	40	40.8	100.0
	Total	98	100.0	

Source: Researcher's field survey (2017)

The researcher wanted to find out how often or frequently do users pay their bills with mobile money because there is a notion that users do not use this option as they are supposed (more frequently) to use. Emma, personal communication (January 2017) posits that users do not use mobile money to pay their bills and the management of MTN is looking for ways to make that option active whereby people can use it frequently. To confirm the earlier

statement, 40.8% of users have never used that option before and 25.5% less frequently used the option. 25.5% users frequently use mobile money to pay bills and 4.1% of them mostly used it in paying their bills. Therefore, the researcher can make the conclusion that most users do not feel secure paying their bills with mobile money. Some form of education should be rolled out to educate users of the importance and benefits of paying their bills with mobile money.

Table 6.24 Cross tabulation between gender of users and how often do you use mobile money

How often do you use mobile money? * Gender of respondents' Cross tabulation					
			Gender of respondents		Total
			Male	Female	
How often do you use mobile money?	Less frequently	Count	1	10	11
		Expected Count	5.1	5.9	11.0
	Unknown/Not Sure	Count	1	1	2
		Expected Count	.9	1.1	2.0
	Frequently	Count	23	22	45
		Expected Count	20.7	24.3	45.0
	Most frequently	Count	20	20	40
		Expected Count	18.4	21.6	40.0
Total		Count	45	53	98
		Expected Count	45.0	53.0	98.0

Source: Researcher's field survey (2017)

The results indicate that 20 each for males and females "*most frequently*" use the MMS and 23 users and 22 users of males and females respectively "*frequently*" use the service. 10 users who are females less frequently use the service and only 1 male less frequently. In terms of frequency, 43 males and 42 females most frequently and frequently use the service. The result is not statistically dependent on each other according to Pearson Chi-Square. There is 7.9% that this result occurred by chance. The probability value is 7.9%, df is 3, and the value is 6.778. Therefore, gender is independent from how often users use the mobile money. The table for the Chi-square can be found in Appendix 4 (i.e. Table 6.19.2).

Table 6.25 How often do you change your four digits' pin

How often do you change your four digits' pin?				
		Frequency	Valid Percent	Cumulative Percent
Valid	Most frequently	1	1.0	1.0
	Frequently	6	6.1	7.1
	Unknown/Not Sure	6	6.1	13.3
	Less frequently	19	19.4	32.7
	Never	66	67.3	100.0
	Total	98	100.0	

Source: Researcher's field survey (2017)

From the table above, 67.3% of users have never change their pin before which represents 66 users. 19.4% of the

users do change the pin less frequently and 6.1% users were not sure of this. 7.1% users frequently and most frequently change their pins. PIN and password changing is a security measure that must be done frequently. For instance, for security reasons CBS students' and staffs' emails change their passwords every 3 months. This serves a security feature in keeping your account safe. Therefore, 67.3% users who do not change their PIN pose a security threat to their mobile money account as well as themselves.

Table 6.26 How often do you top up airtime?

How often do you top up airtime				
		Frequency	Valid Percent	Cumulative Percent
Valid	Most frequently	45	45.9	45.9
	Frequently	33	33.7	79.6
	Unknown/Not sure	5	5.1	84.7
	Less frequently	8	8.2	92.9
	Never	7	7.1	100.0
	Total	98	100.0	

Source: Researcher's field survey (2017)

The researcher wanted to find out how frequent users use to buy airtime with the MMS. 45.9% being majority of the users most frequently buy credit with their mobile money and 33.7% users frequently buy credit with it. However, 8.2% less frequently buy credit with mobile money and 5.1% users were not sure. Further 7% users have never used MMS to buy credit before. Therefore, it could be seen that majority of the users buy credit with mobile money and this can be affiliated to getting 100% bonus on the credit bought if using your mobile money to buy credit. As asserted by Emma, (personal communication, January 2017), "most of our users used the service in buying credit because we give 100% bonus whenever they buy credit with it". Our findings confirm this statement made.

Table 6.27 I believed my mobile money wallet is safe and secured

I believe my mobile money wallet is safe and secure				
		Frequency	Valid Percent	Cumulative Percent
Valid	Strongly disagree	1	1.0	1.0
	Disagree	1	1.0	2.0
	Neither Agree/Disagree	17	17.3	19.4
	Agree	50	51.0	70.4
	Strongly agree	29	29.6	100.0
	Total	98	100.0	

Source: Researcher's field survey (2017)

The results indicate that a total of 80.6% strongly agree and disagree to the statement. 17.3% of the users neither agreed or disagreed with the statement. However, 1% of users each acknowledge that they disagree and strongly

disagree with the statement. Therefore, the researcher can conclude that users are gradually beginning to trust mobile money thereby feeling safe and secured with it. These findings can negate what Tobbin and Kuwornu (2011) found (i.e. trust and security) to continue to be a barrier in the adoption of mobile money in Ghana. It could be seen that this is no more a barrier because most users feel safe and secured with it. The management of MTN still need to bring some innovative ways of making it much more secured like having a trusted third party as proposed by Amakwa and Kevor (2013). Amankwa and Kevor (2013) proposed a model that brings the introduction of a Certificate Authority (CA), which would act as a trusted third-party. The researcher believes that this could go a long way to create much security and trust engaging or while using these services.

6.13.1 Measure of spread for the frequencies

The researcher decided to check the measure of spread for the various frequencies; the mean, median and standard deviation were calculated. Table 6.14.1 (appendix 4) shows the results. For "how often do you go to the bank", the male had a mean of 2.58 and a standard deviation of 1.055. Meanwhile, the women had a standard deviation of 0.0.901 and a mean value of 2.36. The results for this are closely clustered around the mean and it could be seen that there is not much difference between the distributions of this type of frequency. However, the distribution is skewed to the right having the mean a little higher than the median.

With "*how often do you use mobile money*", the mean for males is 4.38 and the standard deviation is 0.650. The females had a mean of 3.98 and a standard deviation of 1.083. The distribution for the females is skewed to the left whereas the distribution for the males is skewed to the right.

For "*how often do you pay your bills with mobile money*", the females had a mean of 1.94 and a standard deviation of 1.231. The males also recorded a mean of 2.64 and a standard deviation of 1.368. Comparing the mean and standard deviation of both genders, it could be seen that there is not much difference between distributions of this type of frequency. However, the distribution is positively skewed having the mean greater than the median. The median was 2.00 and 1.00 for both males and females respectively.

For "*how often do you change your four digits' pin*", the females had a mean of 1.42 and a standard deviation of 0.770 whereas the males had a standard deviation of 1.083 and a mean of 1.69. The result is clustered around the mean. There was a positive skewed distribution where the distribution was skewed to the left. The males had a median of 1.00 and the females 1.00.

Last, for "*how often do you top up airtime*", the males had a mean of 4.38, a standard deviation of 0.716, and a median of 4.00. The females had a median of 4.00, a standard deviation of 1.470, and a mean of 3.74. The females had a distribution that is skewed to the left and the males had a distribution skewed to the right. There is not much difference in the distribution of this type of frequency and that the results are clustered around the mean.

6.14 Assessing the agreement or disagreement of Various activities

The researcher wanted to know the level of agreement or disagreement between some stated statements from the user. Below are the statements and the results obtained from the field.

Table 6.28 Report for various activities on the agreement and disagreement level

	1	2	3	4	5
Activities	Strongly Disagree	Disagree	Neither Agree/Disagree	Agree	Strongly Agree
1) I do not encounter any problem when accessing my mobile money wallet	1 1%	17 17.3%	18 18.4%	41 41.8%	21 21.4%
2) MTN Mobile Money menu is easy to use	1 1%	3 3.1%	2 2.0%	54 55.1%	38 38.8%
3) I will recommend MTN Mobile Money to other people	1 1.0%	5 5.1%	8 8.2%	48 49%	36 36.7%
4) I will always use MTN Mobile Money	-	9 9.2%	11 11.2%	50 51%	28 28.6%
5) I am considering stopping the use of MTN Mobile Money	41 41.8%	37 37.8%	11 11.2%	5 5.1%	28 28.6%

Source: Researcher's field survey (2017)

Table 6.28 (appendix 5) shows 1-5 likert scale of various statements which the researcher wanted to find out if users strongly agree or disagree with them. A total of 63.2% *strongly agree* and *agree* to the statement "I do not encounter any problem accessing my mobile money". 18.4% had nothing to agree or disagree on the statement. However, 18.3% disagree and strongly disagree with the statement.

There are various statements that received stronger agreement which include "I will recommend MTN Mobile Money to other people" (85.7%), "MTN Mobile money menu is easy to use" (93.9%), and "I will always use MTN Mobile Money" (79.6). However, none strongly disagreed with "I will always use MTN Mobile Money" but 9.2% disagreed with the statement. A further 79.6% strongly disagreed with the statement "I am considering stopping the use of MTN Mobile Money" while 33.7 agreed to the statement. Therefore, the researcher can conclude that majority of the users do not encounter any problem when accessing their mobile money and mobile money menu is easy to use. Majority of the users are not ready to stop using mobile money and they will recommend to other people as well. This makes the business model (to be precise the value proposition design) a sustainable one that "creates products and services customers want" (Osterwalder et al, 2014). The level of measurement for all the

statements have been tabulated in appendix 5 (Table 6.55) and the results indicated below.

6.14.1 Measure of spread for the agreements

In Table 6.55 (appendix 5), the level of measure was done for the various statements before this table. The mean, standard deviation and median were calculated for each of the statement. For this statement, "I do not encounter any problem when accessing my mobile money", the mean for the males was 3.71, standard deviation of 0.991, and a median of 4.00. The females had a median of 4.00, mean of 3.71, and a standard deviation of 1.080. The results are close to or around the mean by looking and comparing the mean and the standard deviation. However, this type of distribution is skewed to the left (-0.448) pointing to the negative direction for both males and females.

For the statement, "I will recommend MTN mobile money to other people"; the females had a negatively skewed (-1.078) distribution for this type of agreement. They had a standard deviation of 0.951, a median of 4.00, and a mean of 3.98. Meanwhile, the males had a distribution skewed to the left (-1.038) but the mean is larger than the median and having extreme scores larger. They had a mean of 4.36, a standard deviation of 0.679, and a median of 4.00.

For "I will always use MTN Mobile Money"; the females had a mean of 3.87, a standard deviation of 1.001, and a mean of 4.00. The males had a mean of 4.13, a standard deviation of 0.694, and a mean of 4.13. This histogram of this statement had a distribution skewed to the left having a total skewness value of -0.816.

Again, for this statement "I am considering stopping the use of MTN Mobile money". This had distribution positively skewed to the right and having the means of both greater than the median. The males had a mean of 1.71, a standard deviation of 1.014, and median 1.00. The females had a median of 2.00, a standard deviation of 0.909, and a mean value of 2.02.

Lastly, for this statement "MTN mobile money is easy to use". There was a mean of 4.40, standard deviation of 0.720, and a median of 4.00 for the males. On the other side, the females had a mean of 4.17, a standard deviation of 0.753 and a median of 4.00. The histogram for this distribution was skewed to the left by a figure of -1.573. However, the mean for both genders were greater than the median having extreme scores larger.

6.15 Pearson correlation between frequency of how often do you use your mobile money to other activities

This part examines the Pearson correlation between frequency of using your mobile money service against several activities. This is just to measure the degree of linear relationship between these variables to see if the relationship can be well characterized by a straight line. Below are the activities that were examined

Table 6.29 Pearson correlation between frequency of "how often do you use your mobile money" to How often

do you pay your bills with mobile money"

Correlations			
		How often do you use mobile money?	How often do you pay your bills with mobile money?
How often do you use mobile money?	Pearson Correlation	1	.373**
	Sig. (2-tailed)		.000
	N	98	98
How often do you pay your bills with mobile money?	Pearson Correlation	.373**	1
	Sig. (2-tailed)	.000	
	N	98	98
**. Correlation is significant at the 0.01 level (2-tailed).			

Source: Researcher's field survey (2017)

The table above explains the correlation between "*how often do you use mobile money*" and "*how often do you pay your bills with mobile money*". There is a positive significant relationship between the two variables. This means that if one variable increases; it results in the other increasing and vice versa. The Pearson correlation value is r(96)=.37 , p = .000. Kindly note that r =(N-2).

Table 6.30 Pearson correlation between frequency of "how often do you use your mobile money" and How often do you top up airtime"

Correlations			
		How often do you use mobile money?	How often do you top up airtime
How often do you use mobile money?	Pearson Correlation	1	.432**
	Sig. (2-tailed)		.000
	N	98	98
How often do you top up airtime	Pearson Correlation	.432**	1
	Sig. (2-tailed)	.000	
	N	98	98
**. Correlation is significant at the 0.01 level (2-tailed).			

Source: Researcher's field survey (2017)

Table 6.30 indicates the correlation between "how often you use mobile money" and "how often do you top up airtime". There is a positive significant relationship between the two variables. The test value is r(96)=.43, p=.000. Therefore, it could be said that the decrease in the frequency of using mobile money would result in the decrease of toping up airtime and vice versa.

Table 6.31 Pearson correlation between frequency of how often do you use your mobile money and I do not encounter any problem when accessing my mobile money service

Correlations			
		How often do you use mobile money?	I do not encounter any problem when accessing my mobile money service
How often do you use mobile money?	Pearson Correlation	1	.253*
	Sig. (2-tailed)		.012
	N	98	98
I do not encounter any problem when accessing my mobile money service	Pearson Correlation	.253*	1
	Sig. (2-tailed)	.012	
	N	98	98
*. Correlation is significant at the 0.05 level (2-tailed).			

Source: Researcher's field survey (2017)

The table above examines the correlation between "how often do you use mobile money" and "I do not encounter any problem when assessing my mobile money service". The test is significant and that there is a positive significant relationship between the two variables. This means that if one variable increases, the other increases. The Pearson correlation value is r(96)=.37 , p = .000.

Table 6.32 Pearson correlation between frequency of how often do you use your mobile money and I will always use MTN mobile money

Correlations			
		How often do you use mobile money?	I will always use MTN Mobile money
How often do you use mobile money?	Pearson Correlation	1	.685**
	Sig. (2-tailed)		.000
	N	98	98
I will always use MTN Mobile money	Pearson Correlation	.685**	1
	Sig. (2-tailed)	.000	
	N	98	98
**. Correlation is significant at the 0.01 level (2-tailed).			

Source: Researcher's field survey (2017)

Table 6.32 shows the correlation between "how often you use mobile money" and "I will always use MTN mobile money". There is a positive significant relationship between the two variables. The test value is r(96)=.43, p=.000. Therefore, it could be said that higher scores on one variable are associated with higher scores on the other variable

and vice versa.

6.16 Pearson correlation between preference for MTN mobile money and other transactions

Several correlations test were performed to fully examined the preference of MTN Mobile money over the other mode of transactions. The tables below elaborate and shows statistics.

Table 6.33 Pearson correlation between preference for MTN mobile money and ATM transactions

Correlations			
		ATM Transactions	Level of Preference - Mobile Money Service
ATM Transactions	Pearson Correlation	1	.011
	Sig. (2-tailed)		.913
	N	98	98
Level of Preference - Mobile Money Service	Pearson Correlation	.011	1
	Sig. (2-tailed)	.913	
	N	98	98

Source: Researcher's field survey (2017)

The table above examines the Pearson correlation between preference for MTN mobile money and ATM transactions. The test is not significant as the p value is greater than 0.05. There is not a significant relationship between preference for MTN mobile money and ATM transactions. This happens at r(96)= .01, p=.913. Thus, it can be concluded that there is no predictable relationship between the two variables.

Table 6.34 Pearson correlation between preference for MTN mobile money and Bank Service

Correlations			
		Level of Preference - Mobile Money Service	Bank Service
Level of Preference - Mobile Money Service	Pearson Correlation	1	-.002
	Sig. (2-tailed)		.988
	N	98	98
Bank Service	Pearson Correlation	-.002	1
	Sig. (2-tailed)	.988	
	N	98	98

Source: Researcher's field survey (2017)

Table 6.34 shows the correlation between preference for MTN mobile money and Bank service. There is not a significant relationship between MTN mobile money and Bank service. The test is not significant at r(96)=-.00, p=.988. Thus, the scores on one variable is not in any way affected by the scores on the other variable.

Table 6.35 Pearson correlation between preference for MTN mobile money and e-ZWICH

Correlations			
		Level of Preference - Mobile Money Service	e-ZWICH
Level of Preference - Mobile Money Service	Pearson Correlation	1	-.090
	Sig. (2-tailed)		.376
	N	98	98
e-ZWICH	Pearson Correlation	-.090	1
	Sig. (2-tailed)	.376	
	N	98	98

Source: Researcher's field survey (2017)

Table 6.35 indicates the correlation between preference for MTN mobile money and e-ZWICH. There is not a significant relationship between MTN mobile money and e-ZWICH. The test is not significant because $p>0.05$. The test is not significant at $r(96)=-.09$, $p=..38$. Thus, the scores on one variable is not in any way affected by the scores on the other variable, that is, there is no predictable relationship between the variables.

6.17 Conclusion

The findings were revealing indeed as it brought a whole lot of revelations. Some of the findings will serve as the basis for future research studies to be based on. A peculiar indicator of the findings was the "flashbacks in the use of mobile pay". Another indicator was the various threats that may hinder the successes of the mobile payment which were also brought to light. The next chapter is the last chapter of the study. The overview of findings or the summary will be done in the next chapter and conclusions are made. Recommendations for the various problems observed or discovered in the study are also addressed.

CHAPTER 7

SUMMARY, CONCLUSION, AND RECOMMENDATIONS

7.1 Introduction

This part of the thesis ends the whole study. It does that by summarizing the major findings observed on the field and concludes the study. It however also makes recommendations based on the findings as to how best the mobile pay can be improved and benefit the citizenry by the telecommunication.

7.2 Summary

This study sorts out to examine and assess mobile payments in developing countries: A case study of MTN Mobile Money. The study was conducted from January 2017 to March 2017 and the study area was Accra. The study engaged 147 subscribers of MTN Ghana. The data was analyzed by SPSS and Microsoft Excel. Simple random sampling technique was used in gathering data. The descriptive and exploratory research design was adopted in this study.

This study brings to light the current state of use of the mobile payment and highlights the possible threats with the use of the mobile payment. The major findings will be explored below and conclusions will be drawn out of each of them. It could be realized that the study had a good representation of males and females. 86 males and 61 females were engaged in the study.

The study brought forth the primitive means Ghanaians used to make various payments or sending and receiving of money. It availed that respondents mainly engaged in the use of “transport”, “through someone”, “delivery services”, and “bank" in making various transactions prior to the advent of mobile payment. Even though bank was advanced form back then of making transactions, most people did not prefer to use it for their transactions as they complained about the distance, the traffic at the bank and a whole lot of factors. These made them not prefer the bank and pushed them to continuously to use the transport and through other people.

Again, the study throws light to how the whole MMS started in the country and it also draws reasons as to why and how MTN Ghana continues to be on top of everything does in the payment ecosystem. It, however, talked about the mobile payment market cooperation. It seems they know how to create value for customers in as well as creating values for the organization as well. The study examined the values that customers get in using mobile money and made comparison between the values that MTN is creating. It was realized that there is a “fix” between the values being created for the user and the values MTN intended to create.

The cost structure of MMS was assessed in this study. The researcher found out the cost involved in making various transactions at various point of transaction. This has been well tabulated in the findings but one thing worth

knowing here is that some users are complaining about the cost of transaction which has led to the stoppage of some users. Some of the users who are currently using the MMS also complained about the cost being too high and this made up of 40.8% of the current users. This serves as a threat to the organization.

The values that users derived from using mobile payment were also found. Some of the values users derive from MMS are; its convenient, easily accessible, saves them time, etc.

Furthermore, the study brought forth users who operate banks accounts and those who do not, and why those who have bank accounts do not use the bank for their mode of payments. Most of them indicated that the proximity of MMS to them makes them choose MMS over banks and again there is stress (traffic at the banks) in using the bank to make various transactions.

The users also indicated their level of preference for the various mode of payments or mode of transactions. MMS had 95.9% preferring it to other mode of transfers (like e-ZWICH, bank service, ATM services). This means that users find MMS much more satisfied and convenient to use.

It is interesting to note that 69.4% of the current users use the MMS for airtime purchase. However, users engage in every option or function under MMS. The researcher believed that the MMS was roll out for specific objectives but instead people have found comfortability in using it for buying airtime. The researcher believes that advertisement on the use of MMS is low in the country. MTN seems reluctant rolling a lot of advertisement about MMS to even educate users or non-users on the use of the MMS. It was also noted that users 89.8% of the current users have bank account but most of them prefer to use the MMS for transactions. Most of the users feel convenient and satisfy using the MMS as compared to their previous way of making transactions. With this, the researcher can say that there is an array of hope in the advent of mobile pay in the country but much efforts need to make it a success.

The challenges of using MMS were examined. Some challenges realized were “the amount of money one can conveniently cash out from an agent or merchant”, “network stability”, “additional illegal charges by some agents”, “cost of transaction”. Finally, users also indicated their preference regarding MMS and other avenues (ATM, e-ZWICH, bank services) for various transactions. In terms of preference, 95.9% prefer to use MMS compared to the other ones. However, 76.5% do not prefer e-ZWICH. The conclusion made out from this is that e-ZWICH is gradually moving out of the system and that there is hope in MMS.

Last, an interesting revelation revealed that there is “Flashbacks in the use of mobile pay” where people are pushed back to use their old ways of making various transactions like using the transport or through someone.

7.3 Conclusion

Mobile financial services continue to be one of the most promising mobile applications in the developing world. Mobile money could become a general platform that transforms the entire economies, as it is adopted across commerce, health care, agriculture, and other sectors (Donovan, 2012). There are six MNOs (Glo, airtel, MTN, tigo, expresso, and Vodafone) and four out of them have launched mobile money services in the country. NCA (2016) posits that there are high prospects in the use of mobile money as this is due to the high penetration rate. The penetration rate stood at 135.29% as at November 2016. The study assessed and examined mobile payments in developing countries: the case of MTN Ghana Mobile money. The researcher assessed the current state of use of MTN Ghana mobile money, assessed the mobile payment ecosystem, the challenges confronting the use of MMS, the value and cost structure of MMS, etc.

The findings established that some respondents have dropped from using the MMS, some too have not registered for MMS and others too continue to use it. The researcher had the privilege to observe the innovative things MTN Ghana is putting in place to be on top within the mobile payment market cooperation (MPMC) and by so doing creating interest in the use of mobile payment. The findings however revealed the challenges to the use of mobile money and the greatest of all the challenges is network problems. Some users also complain about the limit of GH 1000 ($230) per day on cash out and others talked about the illegal fees being charged by merchants. These challenges and a lot more pose threat to the viability of the business model and the sustainability of the business.

In a nutshell, mobile money is still growing in the country and efforts should be made to sustain it as this would go a long way to reduce the burden on cash in the system, thereby, improving the cashless system the country intends to create.

7.4 Recommendations

The researcher recommends the following based on the findings:

- MTN Ghana should put in much efforts to make their network stable for various transactions as the success of MMS is greatly linked to the success of the network. This has been backed up by various research works (eg. Amankwa and Kevor 2013). However, it was indicated in the findings that it is of great challenge to users in assessing the MMS
- It was observed that most of the users mostly use the MMS to buy airtime. The researcher believes that the advent of MMS was to do much more than buying airtime with it. It is of the recommendation that MTN Ghana should put programs on educating the Ghanaian users on the functions of the MMS and the benefits users can derive from it. This will in tend educate those who are feeling so reluctant to join the service.

- Since some users are complaining of the cost of making various transactions. MTN needs to reconsider and do something about the cost of transaction as users are finding it difficult to succumb to the price. MTN Ghana should put things in place to try and reduce operational cost as this will intend reduce the cost of various transactions. This when done will be of great benefit to MTN and the users, thereby, keeping users on the platform rather making them stop the use of the service because of the cost of transactions.
- It is of the recommendation that MTN should make efforts to partner with one of the telecommunications in the country to gain a greater percentage of the market to help make this invention a success in the country. M-PESA was started by Vodafone and Safaricom and this made them "reach 9 million customer mark in under three years" (Mas & Radcliffe, 2010). I think the telecommunications can work together on this to make every Ghanaian benefit from the advantages MMS proffers.
- MTN Ghana should try and increase the limit on the "cash out" option to allow more business men and women to engage in the use of MMS. Most users are complaining about the limit and they would like MTN to do something about it. The researcher therefore recommends to MTN to extend the cash out option with much more securities on MMS.
- Changing one one's pin for MMS should be a constant activity by the user. It is recommended that MTN should educate users on the importance of changing their pin and the advantages of using MMS. This can also do by sending frequent messages to various users to change their pin within a specific time (like three months each) limit which could be set by MTN.

7.5 Further Research

- The study should be re-conducted to capture all the MNOs in the country to assess their strength in the payment ecosystem and to examine their impact in making e-payments in Ghana.
- A similar study should be conducted in a different municipality to be able to make comparisons and to also see if using MMS has had any impact on the Ghanaian economy as well as the user.

Bibliography

Adomavicius, G., Bockstedt, J.C., Gupta, A., Kauffman, R.J. (2007). Technology roles and paths of influence in an ecosystem model of technology evolution. Information Technology and Management 8, 185–202.

Afanu, E. K., & Mamattah, R. S. (2013). Mobile Money Security: A Holistic Approach.

Aker, J. C., & Mbiti, I. M. (2010). Mobile phones and economic development in Africa. *The Journal of Economic Perspectives*, *24*(3), 207-232.

Agarwal, S., Khapra, M., Menezes, B., and Uchat, N. (2011). Security Issues in Mobile Payment Systems:. *Computer Society of India. Department of Computer Science and Engineering, IIT Bombay, India*, pp. 142–152

Al-Debei, M. M., and Avison, D. (2010). Developing a Unified Framework of the Business Model Concept, E*uropean Journal of Information Systems*, 19 (3): 359-376.

Amankwa, E. and Kevor, M.O. (2013). Overcoming the Perceived Barriers of E Commerce to Small and Medium Scale Enterprises in Ghana – A Proposed Model. *International Journal of Research In Commerce, IT & Management,* Vol 3, No.5, pp. 129–137

Amit, R. and Christoph, Z. (2001). Value creation in E-Business. Strategic Management Journal, 22(6/7), 493-520.

Antero, M., Hedman, J., & Henningsson, S. (2013). Evolution Of Business Models: A Case Study Of SAP. *ECIS 2013 Completed Research*. Retrieved from http://aisel.aisnet.org/ecis2013_cr/176\nhttp://aisel.aisnet.org/cgi/viewcontent.cg?article=1399&context=ecis2013_cr\nhttp://aisel.aisnet.org/ecis2013_cr/176/

Appiah, E. E., Mawutor, G., and Owusu–Dankwa, I. (2014). Customers Perception and Usage of E-Payments in Ghana. *Journal of Contemporary Integrative Ideas,* Vol 2(2), pp. 40-50

Basole, R.C., 2009. Visualization of interfirm relations in a converging mobile ecosystem. *Journal of Information Technology* 24, 144–159.

Bazijanec, B., Pousttchi, K., & Turowski, K. (2004, September). An approach for assessment of electronic offers. In *International Conference on Formal Techniques for Networked and Distributed Systems* (pp. 44-57). Springer Berlin Heidelberg.

Bhavnani, A., Chiu, R. W.-W., Janakiram, S. & Silarszky, P. (2008). The Role of Mobile Phones in Sustainable Rural Poverty Reduction. World Bank, ICT Policy Division, Global Information and Communications Department, Retrieved November 22, 2016, from http://siteresources.worldbank.org/EXTINFORMATIONANDCOMMUNICATIONANDTECNOLOGIES/Resources/The_Role_of_Mobile_Phones_in_Sustainable_Rural_Poverty_Reductio

_____June_2008.pdf

Boland Jr, R. J., Lyytinen, K., & Majchrzak, A. (2012). Organizing for innovation in the digitized world. *Organization Science*, *23*(5), 1398-1408.

Brandenburger, A.M., Nalebuff, B.J., 2011. Co-opetition. Random House, New York, NY.

Brousseau, E. and Penard, T. (2007). The economics of digital business models: A framework for analyzing the economics of platform. *Review of Network Economics*, 6 (2), 81-114.

Camponovo, G. & Pigneur, Y. (2003). Business model analysis applied to mobile business, in Proceedings of the 5th International Conference on Enterprise Information Systems (ICEIS), 4, pp.173-183, Angers, France, April 23-26.

Carton, F., Hedman, J., Damsgaard, J., Tan, K.-T., and McCarthy, J. 2012. Framework for Mobile Payments Integration, *Electronic Journal of Information Systems Evaluation* 15 (1): 14-25.

Cernev, A.K., Diniz, E.H. & Albuquerque, J.P. De, 2011. Mobile Money and Payment: a literature review based on academic and practitioner-oriented publications (2001-2011). *GlobDev 2011. Proceedings Annual Workshop of the AIS Special Interest Group for ICT in Global Development.*, pp.1–35.

Chae, J. S. U., & Hedman, J. (2015). Business Models for NFC based mobile payments. *Journal of Business Models*, *3*(1).

Corey R. (1991). Marketing strategy—an overview. In Strategic Marketing Management, Dolan R (ed.). *Harvard Business School Press*: Boston, MA; 60–89.

Cravens D. (1999). Strategic Marketing (6th edn.) Irwin, *McGraw-Hill: Boston*, MA.

Daly, N. (2010). International Remittance Service Providers: An overview of mobile InternationalRemittance Service Provider service offerings, Mobile money transfer GSMA, London, United Kingdom. Retrieved from http://www.gsma.com/mobilefordevelopment/wp content/uploads/2012/03/gsmaremittanceserviceproviderwhitepaper182.pdf

Day G. (1990). Market Driven Strategy. Free Press: New York

Donovan, K., 2012. Mobile money for financial inclusion. *Information and Communications for Development*, 2012(61), pp.61–73. Available at: http://www-wds.worldbank.org/external/default/WDSContentServer/WDSP/IB/2012/08/30/000386194_20120830022053/additional/585559324_201406191042051.pdf.

Dubosson-Torbay, M., Osterwalder, A. and Pigneur, Y. (2002). E-business model design, classification, and measurements. *Thunderbird International Business Review*, 44 (1), 5-23.

Dubois, A., & Gadde, L. E. (2002). Systematic combining: an abductive approach to case research. *Journal of business research*, *55*(7), 553-560.

Gartner, Hype cycle for payment innovations 2014. In: Uzureau, C. (ed.), Stamford,

CT, 2014.

Eugene, M., & Christine, E., L. (2017). Research Methods in the Social Sciences. Retrieved from http://lynn-library.libguides.com/c.php?g=549455&p=3771805 (assessed on May 11, 2017)

Field, A. (2005). Discovering statistics using SPSS. 2009 London.

Hedman, J., & Henningsson, S. (2015). The new normal: Market cooperation in the mobile payments ecosystem. *Electronic Commerce Research and Applications*, *14*(5), 305–318. http://doi.org/10.1016/j.elerap.2015.03.005

Hedman, J., and Kalling, T. (2002). Behind the Scenes of the E-Business Construct, in: *4th International Conference on Electronic Commerce*, Chan et. al. (ed.). Hong-Kong: Faculty of Business, City University of Hong Kong.

Hedman, J. and Kalling, T. (2003). The business model concept: Theoretical underpinnings and empirical illustrations. *European Journal of Information Systems*, 12 (1), 49-59.

Heyer, A. & Mas, I. (2011). Fertile Grounds for Mobile Money: Towards a Framework for Analyzing Enabling Environments', *Enterprise Development and Microfinance,* 22(1).

Holst, J., Kjeldsen, M., Hedman, J., & Tan, F. B. (2015). Payment instrument characteristics: a repertory grid analysis.

Hunt S, Morgan R. (1995). The comparative advantage theory of competition. *Journal of Marketing* 59(2): 1–15.

Iansiti, M., Levien, R. (2004). The Keystone Advantage: What the New Dynamics of Business Ecosystems Mean for Strategy, Innovation, and Sustainability. Harvard Business Press, Boston, MA.

Issahaku, H. (2012), Challenges of Electronic Payment Systems in Ghana: The Case of e ZWICH. *American Journal of Business and Management,* Vol. 1, No. 3, pp. 87-95

Jack, W., & Suri, T. (2011). *Mobile money: The economics of M-PESA* (No. w16721). National Bureau of Economic Research.

Jacobson R, Aaker D. (1987). The strategic role of product quality. *Journal of Marketing* 51(4): 31–44

Jenkins, B. (2008). Developing mobile money ecosystems. *Washington, DC: International Finance Corporation and Harvard Kennedy School*.

Katz, M.L., Shapiro, C. (1994). Systems competition and network effects. Journal of Economic Perspectives 8, 93–115.

Kerin R, Varardarajan PR, Peterson R. (1992). First-mover advantage: a synthesis, conceptual framework, and research propositions. *Journal of Marketing* 56(4):33–52.

Kotler P. (1994). Marketing Management: Analysis, Planning, Implementation, and Control (8th edn). Prentice- Hall: Englewood Cliffs, NJ.

Lee, C.H., Venkatraman, N., Tanriverdi, H., Iyer, B. (2010). Complementarity-based hypercompetition in the software industry: theory and empirical test, 1990–2002. Strategic Management Journal 31, 1431–1456.

Levy, Y. (2006). *Assessing the value of e-learning systems*. IGI Global.

Magretta, J. (2002). Why business models matter. Harvard Business Review, 80 (5), 86-92.

Malone, T.W., Weill, P., Lai, R.K, D'Urso, V.T., Herman, G., Apel, T. and Woerner, S.L. (2006). Do some business models perform better than others? Boston, MA: MIT Sloan School of management.

March, J.G., Simon, H.A. (1958). Organizations. John Wiley and Sons, New York, NY.

May, R.M., Levin, S.A., Sugihara, G. (2008). Complex systems: ecology for bankers. Nature 451, 893–895.

Mbiti, I., & Weil, D. N. (2011). *Mobile banking: The impact of M-Pesa in Kenya* (No. w17129). National Bureau of Economic Research.

McKinsey, (2014). In: Dietz, M., Härle, P., Hyde, P., Kapoor, A., Lemerle, M., Nauck, F. (Eds.), The road back: McKinsey global banking annual review 2014. McKinsey & Company, New York, NY.

Messerschmitt, D.G., Szyperski, C. (2005). Software Ecosystem: Understanding an Indispensable Technology and Industry. MIT Press Books, Boston, MA.

Miles R, and Snow C. (1978). Organizational Strategy, Structure, and Process.

Morris, T., & Wood, S. (1991). Testing the survey method: continuity and change in British industrial relations. *Work, Employment and Society*, *5*(2), 259-282.

Moore, J. (1996). The Death of Competition: Leadership and Strategy in the Age of Business Ecosystems. Harper Business, New York, NY.

Nordstrom. (2012). Our Process told as our Team's Timeline: a visual example of how an innovation lab sees the relationship between design thinking, lean, and agile.

Omotunde, M., Sunday, T., and John–Dewole, A.T. (2013), Impact of Cashless Economy in Nigeria. *Greener Journal of Internet, Information and Communication Systems,* Vol. 1, No.2, pp. 040-043

Ondrus, J., & Lyytinen, K. (2011, June). Mobile payments market: Towards another clash of the Titans?. In *Mobile Business (ICMB), 2011 Tenth International Conference on* (pp. 166-172). IEEE.

Osterwalder, A., and Pigneur, Y. (2013). Designing Business Models and Similar Strategic Objects: The Contribution of Is, *Journal of the Association for Information Systems, 14* (5): 237-244.

Osterwalder, A., Pigneur, Y., & Tucci, C. (2005). Clarifying business models: Origins, present, and future of the concept, *Communications of the Association for Information Systems, 16* (1): 1-40.

Pateli, A. G. & Giaglis, G. M. (2004). A research framework for analysing eBusiness models, *European Journal of Information Systems, 13* (4): 302-314.

Patton, M. Q. (2005). *Qualitative research*. John Wiley & Sons, Ltd.

Porter M.E. 1980. Competitive Strategy. Free Press: New York

Pousttchi, K., Schiessler, M., and Wiedemann, D. G. (2009). Proposing a Comprehensive Framework for Analysis and Engineering of Mobile Payment Business Models, *Information Systems and e-Business Management* (7:3): 363-393.

Poel, M., Renda, A. and Ballon, P. (2007). Business model analysis as a new tool for policy evaluation: Polices for digital content platforms. Info, 9 (5), 86-100.

Rappa, M.A. (2004). The utility business model and the future of computing services. IBM Systems Journal, 43 (1), 32-42.

Rhyne, E. & Otero, M. (1992). Financial services for microenterprises: Principles and institutions. *World Development*, 20(11), pp.1561–1571.

Sawy, O.A.E. (2003). The IS core IX: the 3 faces of IS identity: connection, immersion, and fusion. Communications of the Association for Information Systems 12, 588–598.

Saunders, M., Lewis, P., Thornhill, A., (2009), Research Methods for Business Students (5th Edition), London, Financial Times Prentice Hall.

Selander, L., Henfridsson, O., & Svahn, F. (2010). Transforming Ecosystem Relationships in Digital Innovation. In *ICIS* (p. 138).

Selander, L., Henfridsson, O., Svahn, F. (2013). Capability search and redeem across digital ecosystems. Journal of Information Technology 28, 183–197. Shane, S., 2001. Technology regimes and new firm formation. Management Science 47, 1173–1190.

Shane, S. (2001). Technology regimes and new firm formation. Management Science 47, 1173 1190.

Slater, S. F., & Olson, E. M. (2001). Marketing's contribution to the implementation of business strategy: An empirical analysis. *Strategic Management Journal*, *22*(11), 1055-1067.

Solaimani, S. & Bouwman, H. (2012). A framework for the alignment of business model and business processes: A generic model for trans-sector innovation, *Business Process Management Journal,*

18 (4): 655-679.

Stabell, C.B. and Fjeldstad, Ø.D. (1998). Configuring value for competitive advantage: On chains, shops, and networks. Strategic Management Journal, 19 (5), 413-437.

Siegel, M., & Fransen, S. (2013). New Technologies in Remittance Sending: Opportunities for mobile remittances in Africa. *African Journal of Science, Technology, Innovation and Development*, *5*(5), 423–438. http://doi.org/10.1080/20421338.2013.837287

Tanriverdi, H., Lee, C.H. (2008). Within-industry diversification and firm performance in the presence of network externalities: evidence from the software industry. *Academy of Management Journal* 51, 381–397.

Harris, A., Goodman, S., & Traynor, P. (2012). Privacy and security concerns associated with mobile money applications in Africa. *Wash. JL Tech. & Arts*, *8*, 245.

Tobbin, P., & Kuwornu, J. K. (2011). Adoption of mobile money transfer technology: structural equation modeling approach. *European Journal of Business and Management*, *3*(7), 59 77.

Tobbin, P. E. (2010). Modeling Adoption of Mobile Money Transfer : A Consumer.

Varadarajan PR, Clark T. (1994). Delineating the scope of corporate, business, and marketing strategy. *Journal of Business Research* 31: 93–105.

Walker O, Ruekert R. (1987). Marketing's role in the implementation of business strategies: a critical review and conceptual framework. *Journal of Marketing* 51(3): 15–33.

Weick, K. E. (1969). Social psychology in an era of social change. *American Psychologist*, *24*(11), 990.

Voorbij, H., & Ongering, H. (2006). The use of electronic journals by Dutch researchers: A descriptive and exploratory study. *The Journal of Academic Librarianship*, *32*(3), 223-237.

Zammuto, R.F., Griffith, T.L., Majchrzak, A., Dougherty, D.J., Faraj, S. (2007). Information technology and the changing fabric of organization. OrganizationScience 18, 749–762.

Zeithaml V, Berry L, Parasuraman A. (1996). The behavioral consequences of service quality. *Journal of Marketing* 60(2): 31–46

Zott, C., Amit, R., and Massa, L. (2011). The Business Model: Recent Developments and Future Research, *Journal of management, 37* (4): 1019-1042.

Websites and PDF

Banking Tech (2010, December 8). Monitise to offer mobile payments in Nigeria. Retrieved from http://www.bankingtech.com/47656/Monitise-to-offer-mobile-payments-in-Nigeria/

Barclays Bank of Botswana (2016). Hello Money. Retrieved from

https://www.barclays.co.bw/personal/hello-money.html

BBC News (2010, October 18). Al-Shabab bans mobile phone money transfers in Somalia. Retrieved from http://www.bbc.com/news/world-africa-11566247 assessed on December 5, 2016.

Celpay Tanzania (2016). Welcome to Celpay. Retrieved from http://www.tz.celpay.com (assessed on December 3, 2016).

Cherry, S. (2012), Verizon versus Google Wallet, IEEE Spectrum, available at: http://spectrum.ieee.org/podcast/at-work/innovation/verizon-versus-google-wallet (accessed December 3, 2016).

Chua, M. (2011, May 17). Banking on the Unbanked, Telecom Asia. Retrieved from http://www.telecomasia.net/content/banking-unbanked?page=1&qt-most_viewed=0 (assessed on December 5, 2016)

Chutel, L. (2016, September 16). MTN is giving up on mobile money in South Africa. Retrieved from https://qz.com/783230/mtn-has-cancelled-its-mobile-money-service-in-south-africa-but-will continue-to-move-into-financial-services-in-africa/ (assessed on December 3, 2016)

Davidson, N. & Pénicaud, C., 2011. State of the Industry : Results from the 2011 Global Mobile Money Adoption Survey.

Econet Wireless (2016). EcoCash Retrieved https://www.econet.co.zw/ecocash/ (assessed on December 3, 2016)

Finscope Uganda (2009). Results of a National Survey on Demand, Usage and Access to Financial Services in Uganda, Kampala, Uganda. Retrieved from http://www.fsdu.or.ug/pdfs/Finscope_Report.pdf (assessed on December 5, 2016)

First National Bank Botswana. Cellphone Banking. Retrieved from https://www.fnbbotswana.co.bw/channels/cellphone-banking.html (assessed on December 5, 2016)

First National Bank Namibia (2016). Cellphone Banking. Retrieved from https://www.fnbnamibia.com.na/channels/cellphone-banking.html (assessed on December 5, 2016)

First National Bank South Africa (2016). Cellphone Banking. Retrieved from https://www.fnb.co.za/

First National Bank Zambia (2016). Cellphone Banking. Retrieved from: https://www.fnbzambia.co.zm/

Ghana Business News, 2013. https://www.ghanabusinessnews.com/2013/08/19/30-microfinance institutions-collapse-and-clients-lose-money/ (assessed on December 5, 2016)

Ivatury, G. & Pickens, M. (2006). Mobile Phone Banking and Low-Income Customers: Evidence from South Africa. CGAP, United Nations Foundation and Vodafone Group Foundation. Retrieved from http://www.cgap.org/sites/default/files/CGAP-Mobile-Phone-Banking-and-Low-Income-Customers-Evidence-from-South-Africa-Jan-2006.pdf

MobiPay (2016). Namibia's First Mobile Payment Solution. Retrieved from http://www.mobipay.com.na/ (assessed on December 5, 2016)

Mohapatra, S. (2011, September 2). Are Mobile Money Transfer Costs too High? People Move: A Blog about Migration, Remittances and Development, Retrieved from http://blogs.worldbank.org/peoplemove/node/1335 (assessed on December 5, 2016)

Orange Kenya (2016). Orange money. Retrieved from http://www.orange.co.ke/en/about-orange-money/ (assessed on December 5, 2016)

Orange Mali (2016), Orange Money Services, Retrieved from http://www.orangemali.com/omoney/services.php?p=services (assessed on December 5, 2016).

Orange Madagascar (2016). Orange Money. Retrieved from http://www.orange.mg/index.php?option=com_content&task=section&id=99&Itemid=1286&Itemid=1286 (assessed on December 5, 2016)

Orange Niger (2016). Orange Money, Retrieved from http://www.orange.ne/particuliers_orange_money.html (assessed on December 5, 2016)

Owusu-Agyemang Y., Offe A. (2014). Mobile Money Payments in Ghana: Part One, Privat Intervention; http://blog.imtfi.uci.edu/2014/03/mobile-money-payments-in-ghana-part-one.html (accessed on 30th November, 2015)

Porteous, D. (2007). Just how transformational is m-banking? FinMark Trust, South Africa. Retrieved from https://www.microfinancegateway.org/sites/default/files/mfg-en-paper-just-how-transformational-is-m-banking-feb-2007.pdf (accessed on 30th November, 2015)

The Banking Assocaition South Africa, (July 2017). South African Banking sector Overview. Retrieved from http://www.banking.org.za/docs/default-source/publication/banking-sector-overview.pdf?sfvrsn=6 (accessed on November 30, 2015)

The Herald, 2016. http://www.herald.co.zw/30-micro-finance-firms-close-shop/ (accessed on November 30, 2015)

Tigo (2016). Tigo Pesa. Retrieved from https://www.tigo.co.tz (accessed on November 30, 2015)

Uganda Telecom (2016). UTL M-Sente Product Overview, Retrieved from http://www.utl.co.ug/index.php/msente/ (accessed on November 30, 2015)

United Bank for Africa Ghana (2016). U-Mobile Banking, Retrieved from https://www.ubagroup.com/countries/gh/ (accessed on November 30, 2015)

United Bank for Africa Kenya (2011). U-Mobile Banking, Retrieved from https://www.ubagroup.com/countries/ke/ (accessed on November 30, 2015)

United Bank for Africa Nigeria (2016). U-Mobile Banking, Retrieved from https://www.ubagroup.com/countries/ng (accessed on November 30, 2015)

United Bank for Africa Zambia (2016). Electronic Banking, Retrieved from https://www.ubagroup.com/countries/zm/

Unsworth, A (2009, July 10). Barclays launches Hello Money in Kenya. Retrieved from http://www.mobilepaymentsworld.com/barclays-launches-hello-money-in-kenya/

Wireless Federation, (2009, March 5). Mi-Pay and Isys go live with saraf-mobile in Sudan, roll out P2P mobile money services across the region. Retrieved from http://www.wirelessfederation.com/news/14559-mi-pay-and-isys-go-live-with-saraf-mobile-in-sudan-and-roll-out-of-p2p-mobile-money-service-across-region

WIZZIT South Africa (2016). Retrieved from http://www.wizzit.co.za/ (accessed on November 30, 2015)

World Bank (2009). Trade in Financial Services: Mobile Banking in Southern Africa, Washington D.C.: World Bank, Retrieved from https://tis.sadc.int/files/4713/3162/6771/Trade_in_Financial_Services_Mobile_Banking_in_Southern_Africa_by_WB.pdf (accessed on November 30, 2015)

Vodacom (2016). Vodacom M-PESA. Retrieved from http://www.vodacom.co.tz/vodacom-m-pesa (accessed on November 30, 2015)

Yu Mobile (2016). yuCash. Retrieved from http://ke.equitybankgroup.com/business/products/ways-to bank/mobile-banking/yucash (accessed on November 30, 2015)

Appendix 1

Questionnaire

PURPOSE OF RESEARCH

Hello, my name is Frank Owusu and I am a second year Msc. candidate at Copenhagen Business School, Denmark. I am conducting a confidential survey to learn more about mobile payments in developing countries. Particularly, I am interested in learning and assessing the current business model of MTN Ghana mobile money. 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. You are assured that all the information provided will be used for academic purpose only and it will be treated with utmost confidentiality. Your responses are voluntary and all responses will be allocated and reported as a group. You have been chosen at random, over 100 persons will be included in the study. I thank you in advance for your cooperation.

QUESTIONNAIRE

Survey format: In person

Sample frame: Cross-sectional sample of randomly selected MTN Mobile Money Users

Incentive: None

Respondents: MTN Ghana Subscribers

Start of Survey

PART I

1. Date of Survey ……..
2. Name ……
3. Sex □ Male □ Female
4. Educational Level □ Degree holder (Bachelor, Masters, PHD) □ High School Graduate □ None □ Other, please specify
5. Age □18-30 □ 31-40 □above 40
6. Marital Status □ Married □ Not married/Single □ Divorced

Part II

7. Have you used MTN's Mobile Money Service before? (Survey ends if answered NO) □Yes □ No
8. Are you still a user of MTN Mobile Money Service? (If answered Yes then move to question 9) □Yes □ No
9. If NO (refer to question 7), why did you stop using their service? ……
10. What other mode of transaction are you using to make various transactions now? □ by transport □ through someone □ bank

11. How long have you been using MTN Mobile Money? □ Less than a year □1-2 years □ 3-4 years □ 5-6 years □ above 6
12. Why did you choose to sign up for MTN's Mobile Money Service?.....
13. What benefits do you get from using MTN mobile money payments/services?.....
14. What do you use the Mobile Money Service for? (Select all if it applies) □ For payments □ For sending and receiving money □ Buy Airtime □ Check wallet □ Bank Services (transfer to or from a bank) □ Internet Bundles □ Savings and Loans
15. Why did you choose to perform these activities (refer to question 12) with MTN Mobile Money Services?……
16. How did you perform the same transactions or activities in the past? (Select all if it applies) □ By transport □ By Bank □ Delivery services (eg. Postal service) □ Through someone □ Other, please specify……
17. On a scale of 1-5, how convenient or inconvenient is it with using MTN Mobile Money compared to your previous way of performing the same transactions? (Tick one please) □ 1=Very inconvenient □ 2=Inconvenient □ 3=Convenient □ 4-Very convenient □ 5=Extremely convenient
18. On a scale of 1-5, how satisfied or dissatisfied are you with MTN Mobile Money Service? □ 1= Very dissatisfied □ 2=Dissatisfied □ 3=Satisfied □ 4=Very satisfied □ 5=Extremely satisfied
19. Do you plan to use MTN Ghana mobile money service, or another type of mobile banking service for the next month? □ Yes, MTN mobile money □ No □ Bank □ Other Mobile Banking Service, please describe……
20. Are you tempted to use any of the following to replace mobile money payment? □ By transport □ By bank □ Delivery services (eg. Postal service) □ Through a person □ None □ Other, please specify…….
21. Do you have a bank account? (If answered Yes, skip to question 21) □ Yes □ No
22. Why do you not have a bank account? (you can select more than one) □ The minimum balances are too high □ I prefer to keep my money and not at the bank □ No bank is conveniently close to me □ Bank fees or service charges are too high □ Other please specify…… □ Prefer not to answer
23. Why don't you use the bank for your transactions? □ Too costly to use □ A lot of charges associated with transactions □ Other, please specify…….
24. Kindly indicate your level of preference for each of the services below

Services	Most Preferred	Preferred	Unknown or Neutral	Less Preferred	Least preferred

Mobile Money Service					
Bank service					
ATM Transaction					
e-ZWICH					

Kindly tick one option for the following question

	Most frequently	Frequently	Unknown/ Not sure	Less Frequently	Never
25. How often do you go to the bank?					
26. How often do you use mobile money?					
27. How often do you make pay your bills with Mobile money					
28. How often do you change your four digits' pin?					
29. How often do you top up airtime?					

	Strongly Disagree	Disagree	Neither Agree/Disagree	Agree	Strongly Agree
30. MTN Mobile money menu is easy to use					
31. MTN Mobile Money Charges are affordable					
32. I believed my mobile money wallet is safe and secured					
33. I do not encounter any problem when accessing my mobile money service					
34. I will recommend MTN Mobile money to other people					
35. I will always use MTN Mobile Money					
36. I am considering stopping the use of					

MTN Mobile Money					

On a scale of 1 to 5 where 1 is the least challenge and 5 is the highest challenge, indicate how challenge the below activities posed to you when using MTN Mobile Money service.

Challenge	1	2	3	4	5
37. MTN network or service stability or availability for transaction to take place					
38. The amount of money you can conveniently cash out from a merchant/agent					
39. The availability of a merchant close enough to your location at any point in time					
40. Forgetting your pin					

41. Apart from the above challenges, what other concerns or challenges do you encounter in using the MTN Mobile Money service?.....

Appendix 2

Table 6.1.2 Pearson Chi-Square Tests

Chi-Square Tests					
	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	20.615[a]	1	.000		
Continuity Correction[b]	18.879	1	.000		
Likelihood Ratio	23.319	1	.000		
Fisher's Exact Test				.000	.000
Linear-by-Linear Association	20.462	1	.000		
N of Valid Cases	135				
a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 15.62.					
b. Computed only for a 2x2 table					

Source: Researcher's field survey (2017)

Table 6.12.1 Pearson Chi-Square Test

Chi-Square Tests					
	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	.075[a]	1	.785		
Continuity Correction[b]	.000	1	1.000		
Likelihood Ratio	.074	1	.785		
Fisher's Exact Test				1.000	.521
Linear-by-Linear Association	.074	1	.786		
N of Valid Cases	98				
a. 1 cell (25.0%) have expected count less than 5. The minimum expected count is 4.59.					
b. Computed only for a 2x2 table					

Source: Researcher's field survey (2017)

Table 6.17.2 Pearson Chi-Square Test on how often do you go to the bank and owing a bank account

Chi-Square Tests			
	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	56.991[a]	4	.000
Likelihood Ratio	34.411	4	.000
Linear-by-Linear Association	13.125	1	.000
N of Valid Cases	98		
a. 6 cells (60.0%) have expected count less than 5. The minimum expected count is .31.			

Appendix 3

Table 6.14.1 Report on the preference of various transactions

Report					
Gender of respondents		Level of Preference - Mobile Money Service	Bank Service	ATM Transactions	e-ZWICH
Male	Mean	4.56	3.47	3.80	1.93
	N	45	45	45	45
	Std. Deviation	.546	1.079	1.120	1.031
	Median	5.00	4.00	4.00	2.00
	Minimum	Unknown or Neutral	Least preferred	Least preferred	Least preferred
	Maximum	Most Preferred	Most Preferred	Most Preferred	Preferred
Female	Mean	4.47	2.83	3.36	1.60
	N	53	53	53	53
	Std. Deviation	.723	1.267	1.495	.987
	Median	5.00	2.00	4.00	1.00
	Minimum	Less Preferred	Least preferred	Least preferred	Least preferred
	Maximum	Most Preferred	Most Preferred	Most Preferred	Preferred
Total	Mean	4.51	3.12	3.56	1.76
	N	98	98	98	98
	Std. Deviation	.646	1.221	1.348	1.016
	Median	5.00	3.00	4.00	1.00
	Minimum	Less Preferred	Least preferred	Least preferred	Least preferred
	Maximum	Most Preferred	Most Preferred	Most Preferred	Preferred

Source: Researcher's field survey (2017)

Appendix 4

Table 6.19.2 Pearson Chi-Square Tests

Chi-Square Tests			
	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	6.778[a]	3	.079
Likelihood Ratio	7.916	3	.048
Linear-by-Linear Association	4.454	1	.035
N of Valid Cases	98		
a. 2 cells (25.0%) have expected count less than 5. The minimum expected count is .92.			

Source: Researcher's field survey (2017)

Table 6.23 Report on various statements on the frequency of engaging such activities

Report						
Gender of respondents		How often do you go to the bank?	How often do you use mobile money?	How often do you pay your bills with mobile money?	How often do you change your four digits' pin?	How often do you top up airtime
Male	Mean	2.58	4.38	2.64	1.69	4.38
	N	45	45	45	45	45
	Std. Deviation	1.055	.650	1.368	1.083	.716
	Median	2.00	4.00	2.00	1.00	4.00
	Minimum	Never	Less frequently	Never	Never	Less frequently
	Maximum	Most frequently	Most frequently	Most frequently	Most frequently	Most frequently
Female	Mean	2.36	3.98	1.94	1.42	3.74
	N	53	53	53	53	53
	Std. Deviation	.901	1.083	1.231	.770	1.470
	Median	2.00	4.00	1.00	1.00	4.00
	Minimum	Never	Less frequently	Never	Never	Never
	Maximum	Most frequently	Most frequently	Most frequently	Frequently	Most frequently
Total	Mean	2.46	4.16	2.27	1.54	4.03
	N	98	98	98	98	98
	Std. Deviation	.976	.927	1.336	.932	1.222
	Median	2.00	4.00	2.00	1.00	4.00
	Minimum	Never	Less frequently	Never	Never	Never
	Maximum	Most frequently	Most frequently	Most frequently	Most frequently	Most frequently

Source: Researcher's field survey (2017)

Appendix 5

Table 6.55 Report for several statements on the agreement and disagreement

Report						
Gender of respondents		I do not encounter any problem when accessing my mobile money service	I will recommend MTN mobile money to other people	I will always use MTN Mobile money	I am considering the use of MTN Mobile Money	MTN mobile menu is easy to use
Male	Mean	3.71	4.36	4.13	1.71	4.40
	N	45	45	45	45	45
	Std. Deviation	.991	.679	.694	1.014	.720
	Median	4.00	4.00	4.00	1.00	4.00
	Minimum	Strongly disagree	Disagree	Disagree	Strongly disagree	Strongly disagree
	Maximum	Strongly agree	Strongly Agree	Strongly agree	Strongly agree	Strongly Agree
	Skewness	-.694	-1.038	-.611	1.581	-2.311
Female	Mean	3.60	3.98	3.87	2.02	4.17
	N	53	53	53	53	53
	Std. Deviation	1.080	.951	1.001	.909	.753
	Median	4.00	4.00	4.00	2.00	4.00
	Minimum	Disagree	Strongly disagree	Disagree	Strongly disagree	Disagree
	Maximum	Strongly agree	Strongly Agree	Strongly agree	Strongly agree	Strongly Agree
	Skewness	-.279	-1.078	-.683	.919	-1.137
Total	Mean	3.65	4.15	3.99	1.88	4.28
	N	98	98	98	98	98
	Std. Deviation	1.036	.854	.879	.966	.743
	Median	4.00	4.00	4.00	2.00	4.00
	Minimum	Strongly disagree	Strongly disagree	Disagree	Strongly disagree	Strongly disagree
	Maximum	Strongly agree	Strongly Agree	Strongly agree	Strongly agree	Strongly Agree
	Skewness	-.448	-1.215	-.816	1.161	-1.573

Source: Researcher's field survey (2017)

Appendix 6

Table 1.0 Mobile money transfers in Northern Africa

Country	Service Provider	Type of Service Provider	Types of Services	National or International	Available to whom?
Algeria	Western Union and Orascom Telecom	Telecom Company, and Money transfer operator	Payments and Money transfers	National and International	?
Egypt	Banks	Money transfers	Money transfers and checking bank balance	National	Customers of the banks
Tunisia	Western Union, Orascom Telecom Mdinar	Telecom Company, and Money transfer operator Bank and Telecom Company	Payments and Money transfers Money transfers and mobile payments	International National	? Mdinar registered users
Western Sahara	-	-	-	-	-
Sudan	Mi-Pay or Saraf Mobile	Telecom company and financial services provider	Payments and money transfers	?	?
Libya	-	-	-	-	-
Morroco	Mobicash	Telecom Company	Money withdrawals, money deposit, payments, and money transfers	National and International	Everyone

Source: Websites of service providers and Siegel & Fransen, 2013.

Appendix 7

Table 2.0 Mobile money transfers in Western Africa

Country	Service Provider	Type of Service Provider	Types of Services provided	National or International	Available to whom
Cote d'Ivoire	Orange	Telecom Company	Money transfers, mobile payments, cash withdrawals and cash cash deposits	National	Orange Subscribers
	MTN Mobile Money	Telecom Company	Mobile payment, cash deposits, cash withdrawals and money transfers	National	MTN subscribers
Cape Verde	-	-	-	-	-
Burkina Faso	-	-	-	-	-
Ghana	MTN Mobile Money	Telecom Company	Cash deposits, cash withdrawals, money transfers, airtime purchases and mobile payments	National	MTN Subscribers
	Airtel Money	Telecom Company	Cash deposits, cash withdrawals, money transfers and mobile payments	National	Airtel Subscribers
	Vodafone Money	Telecom Company	Cash deposits, cash withdrawals, money transfers and mobile payments	National	Vodafone Subscribers
	Unibank for Africa (UBA)	Bank	Balance Checking, Money transfers, prepaid airtime purchases	National	UBA Customers
	Afri Xpress TntNpay	Mobile Payment	Cash deposit, cash withdrawal, money transfers and mobile payments	National and International (for receiving)	txtNpay Subscribers
Gambia	-	-	-	-	-
Guinea	-	-	-	-	-
Guinea-	-	-	-	-	-

Bissau					
Mali	Orange	Telecom Company	Cash deposit, cash withdrawal, money transfers, mobile payments	National	Orange Subscribers
Niger	Orange	Telecom Company	Cash deposit, cash withdrawal, money transfers, mobile payments	National	Orange Subscribers
Liberia	-	-	-	-	-
Nigeria	Monitise	Mobile money provider	Cash deposit, cash withdrawal, money transfers, mobile payments	National	Monitise subscribers
	United Bank for Africa (UBA)	Bank	Balance checking, money transfers	National	UBA subscribers
Senegal	Orange	Telecom Company	Mobile payments, money transfers, cash deposits, cash withdrawal	National	Orange Subscribers
	Yoban'tel by Obopay	Bank	Cash deposit, cash withdrawal, money transfers, mobile payments	National	Yoban'tel Subscribers
Mauritania	-	-	-	-	-
Sierra Leone	Splash Mobile Money	Mobile Money Provider	Cash deposit, cash withdrawal, money transfers	National	Splash Mobile Money subscribers
	Airtel Money	Telecom Company	Cash deposit, cash withdrawal, money transfers, mobile payments	National	Airtel Subscribers
Togo	-	-	-	-	-

Source – websites of service providers and Siegel & Fransen, 2013.

Appendix 8

Table 3.0 Mobile money transfers in Middle Africa

Country	**Service Provider**	**Type of Service Provider**	**Types of Services provided**	**National or International**	**Available to whom**
Cameroon	MTN Mobile Money	Telecom Company	Cash deposit, cash withdrawal, money transfer, mobile payments	National	MTN subscribers
Congo	CelPay		Cash deposits, mobile payments, money transfers	National	Bank Account Holders
Central African Republic	-	-	-	-	-
Chad	-	-	-	-	-
Equatorial Guinea	-	-	-	-	-
Gabon	-	-	-	-	-
Sao Tome and Principe	-	-	-	-	-

Source – websites of service providers and Siegel & Fransen, 2013.

Appendix 9

Table 4.0 Mobile money transfers in Eastern Africa

Country	Service Provider	Type of Service Provider	Types of Services provided	National or International	Available to whom
Zimbabwe	-	-	-	-	-
Tanzania	Vodacom M-Pesa	Telecom Company	Cash deposit, cash withdrawal, money transfers, mobile payments	National	M-PESA customers
	Airtel Money	Telecom Company	Cash deposit, cash withdrawal, money transfers, mobile payments, prepaid airtime purchases	National	Airtel customers
	CelPay	Bank	Cash deposit, cash withdrawal, mobile transfers, mobile payments	National	CelPay customers
	Tigo Pesa	Telecom Company	Cash deposit, cash withdrawal, mobile transfers, mobile payments	National	Tigo Customers
Uganda	MTN mobile Money	Telecom Company	Cash deposit, cash withdrawal, money transfers	National and International	Both MTN and Non-MTN customers
	Airtel Sap	Telecom Company	Cash deposit, cash withdrawal, money transfers, mobile payments	National	Airtel Customers
	UTL M-Sente	Telecom Company	Cash deposit, cash withdrawal, money transfers, mobile payments	National	UTL M-Sente Customers

Seychelles	-	-	-	-	-
Somalia	-	-	-	-	-
Rwanda	MTN Mobile Money	Telecom Company	Money withdrawal, cash withdrawal, and Cash deposit	National	MTN and Non-MTN customers
	Banque Populaire du Rwanda (BPR)	Bank	Electricity purchases, prepaid airtime, money transfers, and balance checking	National	BPR customers
Mauritius	-	-	-	-	-
Madagascar	Orange	Telecom Company	Money withdrawal, cash withdrawal, and Cash deposit	National	Orange Subscribers
Kenya	M-Pesa	Telecom Company	Money withdrawal, cash withdrawal, mobile payments, and Cash deposit	National and International	M-Pesa Customers
	Airtel Money	Telecom Company	Money withdrawal, cash withdrawal, mobile payments, and Cash deposit	National	Airtel Customers
	Orange	Telecom Company	Money withdrawal, cash withdrawal, mobile payments, and Cash deposit	National	Orange Customers
	yuCash	Telecom Company	Money withdrawal, cash withdrawal, mobile payments, and Cash deposit	National	yuCash customers
	United Bank for Africa	Bank	Electricity purchases, prepaid airtime, money transfers, and balance checking	National	UBA customers
	Barclays		Electricity purchases,	National	Barclays

	Hello Money	Bank	prepaid airtime, money transfers, and balance checking		Customers
Eritrea	-	-	-	-	-
Burundi	Ecokash	Telecom Company	Money withdrawal, cash withdrawal, mobile payments, and Cash deposit	National	Ecokash customers
Comoros	-	-	-	-	-
Djibouti	-	-	-	-	-

Source – websites of service providers and Siegel & Fransen, 2013.

Appendix 10

Table 5.0 Mobile money transfers in Southern Africa

Country	Service Provider	Type of Service Provider	Type of Services Provided	National or International	Available to Whom?
Zambia	CelPay	Bank	Good purchases at selected retailers, airtime purchases, cash withdrawal, and cash deposit	National	CelPay users
	MTZL	Bank or Business	Money transfer, financial transactions, and cash deposit	National	MTZL users
	MTN Mobile Money	Telecom Company	Money withdrawal, cash withdrawal, airtime purchases, and Cash deposit	National	Both MTN and Non-MTN subscribers
	First National Bank (FNB)	Bank	Prepaid airtime purchases, money transfers, cash withdrawals, and balance checking	National	FNB Customers
	United Bank for Africa (UBA)	Bank	Prepaid airtime purchases, money transfers, cash withdrawals, and balance checking	National	UBA customers
Swaziland	MTN Mobile Money	Telecom Company	Money withdrawal, cash withdrawal, airtime purchases, and Cash deposit	National	Both MTN and Non-MTN subscribers

South Africa	MTN Mobile Money	Telecom Company	Money withdrawal, cash withdrawal, airtime purchases, and Cash deposit	National	Both MTN and Non-MTN subscribers **(Cancelled now)**
	First National Bank	Bank	Prepaid airtime purchases, money transfers, cash withdrawals, and balance checking	National	FNB Customers
	NedBank Vodacom	Bank	Money transfers, goods purchases	National	Both members of Standard Bank and non-Standard
	MiMoney (Standard Bank	Bank, Money transfer Operator	Balance checking, money transfers, prepaid airtime, goods and electricity purchases	National and International	Bank customers
	Absa and Western Union WIZZIT	Bank	money transfer, mobile payments, debit card	National	Absa customers WIZZIT customers
Namibia	Mobi Pay	Business	Cash deposit, cash withdrawal, money transfers, mobile payments	National	MobiPay customers
	First National Bank	Bank	Balance checking, cash withdrawals, money transfers, prepaid airtime purchases	National	FNB customers
Lesotho	-	-	-	-	-
Malawi	-	-	-	-	-
Mozambique	-	-	-	-	-

Botswana	MTN Mobile Money	Telecom Company	Money withdrawal, cash withdrawal, airtime purchases, and Cash deposit	National	Both MTN and Non-MTN subscribers
	First National Bank	Bank	Balance checking, cash withdrawals, money transfers, prepaid airtime purchases	National	FNB customers
	Barclays Hello Money	Bank	Balance checking, money transfers, prepaid airtime, electricity purchases	National	Barclays Customers
Angola	-	-	-	-	-

Source – websites of service providers and Siegel & Fransen, 2013.