UNIVERSITY OF GHANA

DEPARTMENT OF INFORMATION STUDIES

AN ASSESSMENT OF MOBILE MONEY SERVICE ADOPTION IN GHANA: A CASE STUDY OF FIDELITY BANK GHANA LTD AND GHANA COMMERCIAL BANK GHANA LIMITED

BY

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THIS THESIS IS SUBMITTED TO THE UNIVERSITY OF GHANA, LEGON IN PARTIAL FULFILLMENT OF THE REQUIREMENT FOR THE AWARD OF MPHIL INFORMATION STUDIES DEGREE

July 2018
DECLARATION

I do hereby declare that this thesis is my own original work and has not been submitted either in whole or in part to any institution for any degree. Where references are made to works of other researchers, due acknowledgements are given.

I bear sole responsibility for any shortcomings

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PROF. E. E. BADU
(SUPERVISOR)

DATE: ………………………………………
DEDICATION

I dedicate this thesis to the Almighty God, my wife, Mrs. Ethel Nerkai Akosen, and my children, Yannis Nii Adjei Akosen, Joelle Naa Shormeh Akosen and Ethan-Lawrence Nii Akosenfio Akosen for their love and support.
ACKNOWLEDGEMENT

I wish to recognise the massive contribution of my supervisor, Dr. Ebenezer Ankrah for his timeless devotion, tolerance, direction, constructive criticisms and professionalism all through the supervision of this thesis. My gratitude also goes to my co-supervisor Professor E. E. Badu for his valuable contributions in terms of scholarly material and guidance throughout this work. Furthermore, I am also grateful to Professor A. A. Alemna and Professor Harry Akussah, for their encouragement, advice, guidance, fatherly love and continued support in my life. You have indeed been a blessing.

A very special thank you goes to Dr. Emmanuel Adjei (Head of Department of Information Studies, Mr. Musah Adams (Senior Lecturer, Department of Information Studies), Mr. Samuel Nii Tackie (Senior Lecturer, Department of Information Studies), Jemima Kotei-Walsh (MTN Ghana), Elvis Akpabli (MTN Ghana), Augustine Mante (MTN Ghana) for their immense support and encouragement during the period of this project.

Lots of appreciation also go to all the banks and officials especially Ms. Juliet Onny (GCB) and Dr William Derban and Prince Osei Hyeaman-Addai (Fidelity Bank Ghana Limited). I also wish to acknowledge the immense support and motivation received from my family and friends towards the completion of this research work. Finally, special appreciation goes to my course mates, their comments during peer reviews were helpful.
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<tr>
<td>2G</td>
<td>Second Generation</td>
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<td>3G</td>
<td>Third Generation</td>
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<td>ATM</td>
<td>Automated Teller Machine</td>
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<td>BOG</td>
<td>Bank of Ghana</td>
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<td>CEO</td>
<td>Chief Executive Officer</td>
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<td>DOI</td>
<td>Diffusion in Innovation</td>
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<td>GSMA</td>
<td>GSM Association</td>
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<td>HSPA</td>
<td>High Sped Packet Access</td>
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<td>ICT</td>
<td>Information and Communications Technology</td>
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<td>IOT</td>
<td>Internet of Things</td>
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<td>ITU-IT</td>
<td>International Telecommunication Union</td>
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<td>LAC</td>
<td>Latin America and the Caribbean</td>
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<td>M-banking</td>
<td>Mobile banking</td>
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<td>MM</td>
<td>Mobile money</td>
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<td>MTN</td>
<td>Mobile Telephone Network</td>
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<td>NFC</td>
<td>Near Field Communication</td>
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<td>P2P</td>
<td>Peer to Peer</td>
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<td>PC</td>
<td>Personal Computers</td>
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<td>PEOU</td>
<td>Perceived Ease of Use</td>
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<td>PLC</td>
<td>Public Liability Company</td>
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<td>PR</td>
<td>Perceived Risk</td>
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<td>PSTN</td>
<td>Public Switch Telephone Network</td>
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<td>Definition</td>
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<td>PT</td>
<td>Perceived Trust</td>
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<td>PU</td>
<td>Perceived Usefulness</td>
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<td>RA</td>
<td>Relative Advantage</td>
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<td>ROA</td>
<td>Return of Assets</td>
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<td>ROE</td>
<td>Return on Equity</td>
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<td>SMS</td>
<td>Short Messaging Service</td>
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<td>SSA</td>
<td>Sub-Saharan Africa</td>
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<td>TA</td>
<td>Transactional Cost</td>
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<td>TAM</td>
<td>Technology acceptance model</td>
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<td>TPB</td>
<td>Theory of Planned Behaviour</td>
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<td>USD</td>
<td>United States Dollars</td>
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<td>UTAUT</td>
<td>Unified Theory of Acceptance and use of Technology</td>
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ABSTRACT

The rise of mobile money in Ghana has opened up diverse opportunities in the financial sector, and has become the catalyst to bridging the gap between the banked and unbanked population. It has increased awareness of the need to develop the technological base of every sector for national development. This study assessed mobile money service adoption in Ghana using GCB Ghana Bank and Fidelity Bank Ghana Ltd as case studies, with a view of recommending solutions to fine-tune the banks’ services portfolio. A conceptual model was developed based on the Unified Theory of Acceptance and Use of Technology (UTAUT). The study adopted the survey methodology and was placed within the scientific epistemology of realism. The study setting were GCB Limited and Fidelity Bank in the Greater Accra Region. The study population were the bank customers, a sample of 188 of which were used for the study. Convenience sampling was adopted for the study. Questionnaire was the main instrument for data collection and the Statistical Package for Social Sciences (SPSS) 2.0 was used for the analysis of the data. The findings revealed that, customer needs for mobile money services differed between the banked and the unbanked population. The respondents informed that, the main reasons mobile money adoption in the banks are checking of accounts, paying bills, withdrawals among others. But, for the unbanked customers adoption is mainly driven by sending and receiving cash. It also noted that, adoption of mobile money service in Ghana is affected by perceived usefulness, perceived trust, social influence and competitive intensity. The study recommended among others that, stakeholders in mobile money in Ghana and the mobile money providers recognize these factors that affect customers ‘intention to use mobile money as well as the challenges associated. This is necessary so as to increase its use and encourage its general acceptance within the banking sector. Furthermore, the study provided guidance to mobile financial institutions to ensure ease and usefulness of mobile money services
to increase growth and adoption. Further research on the assessment of mobile money services in the banks could help to determine the impact of these services on revenue and liquidity of the banks.
CHAPTER ONE
INTRODUCTION

1.1 Background of the study

The advent of Information and Communication Technologies (ICT) has significantly changed the landscape and socio-economic fabric of most countries around the world leaving a marked imprint on most spheres of life. One of such sectors to be heavily impacted by ICT is the Telecommunications industry. All over the world, telecommunication services are growing phenomenally, with the emergence of value added services like, Mobile broadband, Mobile money and Mobile banking attracting much attention as the notable drivers of such growth. In the future, the achievement of convergence in telecommunications and other ICT sectors, is likely to lead to more advanced technologies like the Internet of Things (IOT), with exciting prospects for more value-added services.

The findings from a recent study by the Global System Mobile Association (GSMA, 2017) entitled “State of the Industry Report on Mobile Money”, revealed that, two billion people worldwide still remain unbanked without access to safe, secure and affordable financial services. It further noted that mobile money is available in two-thirds of low and middle-income countries. Mobile money providers are processing an average 30,000 transactions per minute, or more than 43million per day. Successively, half of the population in countries in Sub-Saharan Africa, and the Caribbean are actively using mobile money services. In December, 2016, “the mobile money industry processed more than 22 billion dollars in transactions and its total revenue for the top providers
surpassed 1 billion dollars and there were 277 million registered accounts more than the total number of bank accounts in the region” (GSMA, 2016).

The World Bank (2006) defines mobile money service as services that allow customers to use their mobile phones to send and receive money electronically from one person to another using a mobile phone. The transfer can be either a domestic transfer or international remittances” According to Jenkins (2018), “money that can be accessed and used via mobile phone is referred to as mobile money”. Other scholars like Dolan (2009) has stated that, “mobile money is a suite of financial services offered through mobile phones and other handheld devices”. Mobile money services relate peer to peer transfers, international remittances (both domestic and international), Airtime top up, retail payments and mobile banking, school fees payment, among others. The study will adopt mobile money services specifically, transfers (cash in and out,) and payments for retails transactions (cable TV, utility bills etc). The advent of mobile money in the new technological age has witnessed such tremendous growth and has been the driving factor of some economies in emerging markets in Africa and South America among others. The recent mobile money growth has enabled many individuals who are otherwise exempted themselves from the formal financial system to perform financial transactions (Cash out and Cash in and retail payments) relatively cheaply, securely, and reliably.

Countries in Latin America and the Caribbean (LAC), Asia among others have taken giant steps in developing mobile money for the region. According to GSMA State of the Industry report on Mobile Money 2016 edition, nearly two-thirds of markets in Latin America and the Caribbean (LAC) have at least one live mobile money service, with a total of 37 mobile money services in
19 markets. This includes seven new services launched in Brazil, Colombia, the Dominican Republic, Ecuador, Panama, and Peru since 2014. The GSMA estimates an additional 18 planned deployments will launch in LAC. The total volume of transactions in LAC in December 2014 (not including cash-in/cash-out) was 7.74 million (worth USD 208 million) whereas the total volume of transactions in East Africa in December 2014 (not including cash-in/cash-out) was 270.6 million (worth USD 3.52 billion).

The ITU- IT Technology Watch Report (May 2013), has postulated that “mobile money has achieved the broadest success in Sub-Saharan Africa, where 16 per cent of adults report having used a mobile phone in the past 12 months to pay bills or send or receive money”. The share using mobile money is less than 5 per cent in all other regions. It is very profound to note that, there are 277 million registered mobile money accounts in Sub-Saharan Africa, more than the total number of banks in the region. In Africa, the most visible case of mobile money adoption is Kenya, where active bank accounts increased in number from 2.5 million in 2007 to more than 15 million in 2011. M-PESA is the name of the mobile money service in Kenya operated by Safaricom Kenya. The growth of Mobile Money in Ghana has been meteoric since its inception in 2009 by MTN Ghana. According to the Bank of Ghana Annual Report 2016, "the number of registered mobile money customers at the end of 2016 was 19,735,098, showing a 50.4% growth over the 2015 data and similarly, the number of active mobile money customers increased by 70.8% to 8,313,283 in 2016".

There are currently three (3) mobile network operators operating mobile money in Ghana. These are: MTN Ghana, AirtelTigo and Vodafone. MTN Ghana operates mobile money (MoMo) with,
Vodafone - Vodafone cash; and AirtelTigo - AirtelTigo cash. Mobile money in Ghana has offered millions of people with access to mobile phones, a potential solution to their banking needs. It shows the vital role telecom companies are playing to advance the central bank’s cashlite economy agenda, and also to ensure that the push for more financial inclusion is within the reach of millions of Ghanaians.

The development in mobile money service within the period may be ascribed to the central bank’s empowering regulatory framework, which is making an open and level playing ground together with mobile operators’ pledge to boost mobile money services. This development and scale are positive signs for the industry, since it exhibits a higher level of customer trust and portable mobile money’s capacity to digitize a growing amount of capital. According to the Bank of Ghana Annual Report (2016) although policy improvements are still required to ensure mobile financial services reach the full addressable market and achieve total financial inclusion, the results from the year under review is nothing short of creditable from all players within the ecosystem. Ghana’s mobile money sub-sector is set to experience additional progress and interoperability, which will enable cross-network financial transactions, is expected to be one of the significant growth vehicles aside from new business models developing countries in an effort to scale up merchant payments and accelerate the transition from cash to digital forms of payment.

Ghana has one of the most vibrant banking industries in Africa. The history of banking in Ghana dates back to 1953, when the Bank of the Gold Coast was set up by the British colonial Government, with Alfred Engleston, a Scottish banker on secondment from the Bank of England, as the first governor. The Bank of Ghana took over the management of the currency and in July
1958 it issued its first National Currency - the Cedi - to replace the old West African currency notes. By the end of 2016, there were 33 commercial banks operating in Ghana. Sixteen (16) of these banks are Ghanaian owned, whilst the rest are foreign controlled. In Ghana, technology advancements have generated new channels for delivering bank services. Generally, banks have looked for technologies which enabled them to serve their customers more cost-efficiently and made them more helpful to their customers (Abor, 2004). According to Hinson, Mohammed and Mensah (2006) internet and mobile banking have also received massive acceptance in the banking industry. Though banks offer mobile banking services, most of them are collaborating with telecommunication companies to provide mobile money services. It is therefore important for academics and industry players to understanding the driving forces of mobile money in pushing the agenda for a cashlite economy.

1.2 Statement of the Problem

The past few years have been turbulent times for banks in Ghana. They have had to cope with challenges, such as slower economic turnover, increased competition from the growing number of new banks and microfinance institutions and, most recently, new higher recapitalization requirements by the central bank. These difficulties have resulted in some casualties, with a number of banks either closing down (e.g. UT Bank, Capital Bank and recently Unibank Ltd) to meet the regulatory requirements and stay in business (Adogla-Bessa, 2017).

Amidst all this instability within the banking sector, the central bank in a bid to achieve financial inclusion for all granted telecommunications companies (telcos) licenses to operate mobile financial services in 2015. They were given the authority to set up separate fully autonomous
business entities for that purpose. In July 2015, all Telcos set up their mobile financial services
institutions per the new Bank of Ghana guidelines for e-money issuers in Ghana and agent
guidelines (Bank of Ghana, 2015). Between 2010 and 2017, MTN Ghana and Vodafone rolled out
a total of more than one hundred thousand (100,000) mobile money merchant points to support the

Some may see the central bank’s initiative and the telcos spirited activities in response as heralding
competition for the traditional banks, e.g. Bampoe (2015) and Frimpong and Gyamfi (2016).
However, a closer look at the Bank of Ghana initiative rather indicates great opportunities for the
banks. To begin with, the central bank license provisions require the telcos to work with the
traditional banks. Hence all the electronic funds which mobile money services depend on to
function smoothly are issued by the banks. Also, all mobile money subscriber wallets are owned
by the banks and not the telcos (Bank of Ghana, Annual Report 2016).

Furthermore, banks are not barred by the central bank regulations from providing mobile money
related services. Therefore, they have the opportunity to integrate their traditional services with
that of mobile money. The most popular instance has been linking customers’ bank accounts to
their mobile money wallets to allow convenient wallet-bank transactions. Given the already
excellent adoption of electronic banking modes such as ATMs, internet banking and SMS banking
by the banking industry and their customers, together with the wide penetration of mobile
telephony in Ghana, the environment is fertile for the integration of traditional banking and mobile
money services.
In spite of these opportunities, there seems to be a gap between the adoption of mobile money services offered directly to customers by the telecommunication companies in Ghana and the adoption of mobile money integrated services offered by the banks (Bank of Ghana Annual Report, 2016). There is therefore the need to understand the nature of the adoption of the mobile money services offered by the banks. An extensive review of the literature shows that, myriads of studies have been done on the adoption of mobile money services in general, but no research was found on the adoption of mobile money services offered by banks, especially in Ghana. That is what this study seeks to contribute to, by assessing the adoption of mobile money services in Ghana, using as case studies two commercial banks (Fidelity Bank and GCB Bank Ltd) and their customers.

1.3 Purpose of the study

The purpose of the study is to assess mobile money service adoption in Ghana, a case study of GCB and Fidelity Bank Ltd, with a view of recommending solutions to fine-tune the banks service portfolios.

1.4 Objectives of the Study

The following are the specific objectives

1. To determine the factors influencing the adoption of mobile money services by customers of commercial banks.

2. To evaluate the ease and usefulness, of mobile money services among customers of the selected commercial banks.

3. To examine the perceived trust of mobile money services among customers of the selected Commercial banks.
4. Identify the challenges associated with the adoption and use of mobile money services.

5. To recommend an appropriate model for the improvement and integration of mobile money services in the banking industry.

1.5 Conceptual Framework

Of specific interest to this thesis is wireless information technology (IT)/ information system (IS) adoption. Thus, a review of prior studies suggested the theoretical foundations for identifying the drivers of information system adoption. Information system (IS) is define “as a set of interrelated components that collect or retrieve, process, store, and distribute information to support decision making and control in an organization” (Willcocks, 2013). In addition, IS aids managers and employees to evaluate challenges, envision difficult issues and develop innovative products. Technological improvements have been able to minimize the number of low-skilled works whiles increasing the numbers of high-skilled jobs (Willcocks, 2013). IT has given birth to novel occupational technology which has made production much faster. Since the inception of technology, some theorists have propounded theories relative to IS and its adoption. This section reviews some of them.

Increased impact of globalisation and technology has forced most firms to use information systems in various functional areas and sections in recent times. Currently firms anticipate IT to lessen cost, enhance service, and realise efficiency (Willcocks, 2013). Suitable information implements can help organisational leaders, workers and consumers to rapidly react to market change, while managing cost and risks. Vujovic (2005) holds the opinion that firms nowadays need intensive utilisation of multidisciplinary knowledge. He continues by stating that education is supposed to
offer the attainment of fresh skills, like discovering important information, boosting innovative mindset, efficient communication, teamwork and others. Willcocks (2013) conceptualises IT to be an operational element and tool that has drastically altered the firm strategy, organisational procedures and communication and is progressively incorporated into all operations (Willcocks, 2013). Among the various organisational processes that has received technological attention is the human resource management function.

According to Bampoe (2015), “the initial slow up-take of mobile money service in countries like Ghana compared to Kenya implies a difference in technology adoption behaviour”. Therefore, a person’s intention to use a mobile phone and its attendant recognition of electronic money is the determinant force for accepting mobile money services to accumulate value and as a means of exchange worldwide. Tobbin (2010) asserts that “the value of mobile money services can only be realized when consumers embrace and use the innovation”. Advances in technology have provided models and theories in an attempt to examine the reasons behind the acceptance and use of new technologies. Some of these are the famous the Technology Acceptance model (TAM) and the diffusion of innovation theory (DOI) (see in Venkatesh & Davis, 2000; Legris, Ingham & Collerette, 2003; Kaminski, 2011; Sanson-Fisher, 2004). To this end, this study evaluates the TAM model for studying IT/IS acceptance.
1.5.1 Technology Acceptance Model (TAM)

TAM is one of the most influential extensions of Ajzen and Fishbein's theory of reasoned action (TRA) in the literature. Davis's technology acceptance model (Davis, 1989; Davis, Bagozzi, & Warshaw, 1989) is the most widely applied model of users' acceptance and usage of technology (Venkatesh, 2000). It was developed by Fred Davis and Richard Bagozzi (Davis 1989, Bagozzi, Davis & Warshaw 1992). TAM replaces many of TRA's attitude measures with the two technology acceptance measures—ease of use, and usefulness. TRA and TAM, both of which have strong behavioural elements, assume that when someone forms an intention to act, that they will be free to act without limitation. In the real world there will be many constraints, such as limited freedom to act (Bagozzi, Davis & Warshaw 1992).

TAM has been employed by a number of scholars in evaluating consumer behaviour towards technology adoption (e.g., Legris et al., 2003), including mobile technology (e.g., Hong, Thong & Tam, 2006; Nysveen et al., 2005). Its elements are: “perceived usefulness (PU) which is said to be the degree to which a person thinks that using a particular system will enhance his or her performance whiles perceived ease of use (PEOU) is the degree to which a person believes that using a particular system will be free of effort” (Davis, 1989). TAM has received approvals from previous scholars on its contribution towards the understanding of consumer behaviour towards technology. For example, Lu et al. (2003, p. 207) indicates that “throughout the years, TAM has received extensive empirical support through validations, applications and replications for its power to predict use of information systems”. Also, Legris et al., (2003) states that “TAM has
proven to be a useful theoretical model in helping to understand and explain user behaviour in information system implementation” (p.202).

1.5.1.1 Empirical Application of TAM to Mobile Money Service

Available literature on the adoption of MM represents a component of previous investigations into mobile banking and mobile payment. Consequently, it is argued that factors that affect selection of m-banking and m-payment environment must be linked to mobile money. Comparisons can be inferred between RA and PU; complexity and PEOU to the degree that some scholars recognize the TAM constructs as vital factors in their study of the theory of use and perceived use of mobile money services. Notwithstanding, creating diverse estimations for RA and PU was observed as especially crucial in MM adoption. In this study, complexity and PEOU is observed to be much more alike to be divided.

Existing literature and various researchers have utilized models to additionally clarify the key determinants of TAM, for example, perceived usefulness and perceived ease of use and its direct relationship in adopting and utilizing mobile money services, with reference to the diagram below. This is reinforced by different constructs such as perceived trust (PT), transactional cost (TC) and perceived risk (PR). Additionally, reliability and perceived privacy are recognised as antecedents of perceived trust. The TAM model in its application, clarifies the various components identifying with the terms that encourage the acceptance and adoption of mobile money services.

TAM suggests that usage attitude is a direct function of attitudinal intention which is also a function of behaviour toward usage reveal outlooks of favorableness or favourableness toward the
use of technology and PU which shows the confidence that using the technology will augment performance. Davis (1989) maintains that behaviour is examined by both PU and PEOU. Additionally, a vital goal of TAM is to offer a foundation for determining the effect of external factors on inner beliefs, behaviors, intents, and usage. In line with IS, TAM can be useful in assessing the adoption of information systems. The model assists managers to identify perceived ease of use, perceived importance of the system, and how they mold the intrinsic behaviour of customers.

Figure 1.1  **Technology Acceptance Model (TAM) Davis (1989)**

Source: Davis, et.al. (1989)

**a) Perceived Usefulness**

PU can be explained as the extent to which an individual feel or agrees that utilizing a specific structure would improve performance. While the underlying description expressed was based on its benefits in undertaking a task or activity, PU in the appropriation of mobile services is
characterized in a more extensive setting to incorporate how appropriately individuals understand and accept the integration of mobile services into their day to day activities (Kleijnen et al., 2004). According to Chen (2008) PU in a mobile payment setting can additionally be explained as the extent to which the consumer believes that the MM transfer will enhance his transaction. An increase in this belief would lead to an increase in consumers’ intent in utilizing MM transfer services.

PU has extensively been established as a key element for a consumer’s intent to utilize mobile services. Additionally, the degree to which an individual discovers the MM transfer helpful might rely upon the RA of the service. On the off chance that qualities such as mobility and easy accessibility of mobile services results in consumer belief that the MM transfer is superior to previous systems (other money transfer services), then at that point the perceived usefulness will most likely be influenced. In respect to the this, Luarn and Lin (2005) posit that the decisive purpose for individuals’ exploitation of MM transfer is that they find them advantageous.

b) Perceived Ease of Use (PEOU)

This is “the extent to which an individual in the utilization of a particular system believes he/she would be free of effort” (Davis, 1989). MM transfer incorporates registration or enrollment procedures, ease of use of the payment procedure, easy access to customer services, nominal steps required to make a payment, appropriate screen size and input capabilities. Likewise, individuals’ accessibility to MM transfer agents expands PEOU. Moreover, it ought to be available on cell phones with the most elementary features and software. Some researchers (e.g., Venkatesh and Davis, 2000) have reasoned that PEOU is a key element to consumer behavioral intentions. With
a specific end goal to keep the “under-utilized” system issue, MM transfer must be simple to learn and simple to utilize (Luarn & Lin, 2004).

c) Perceived Trust (PT)
Like all business transactions, the mobile money transfer environment requires a key component of trust. To be accepted as a realistic element of doing business, MM transfer ought to overcome user distrust. For this study, trust is characterized as a measure of consumer's level of assurance that the service rendered to them would be provided with very little or no hindrance. Availability of localized agents who are very much familiar in the various societies is essential in acquiring this level of trust. Consumers of mobile money services in Ghana would expect some level of protection from operators. Reliability of the service can be estimated by its effective usage over a time frame with practically no obstruction. Consumers need a conviction that the system is solid to guarantee an effective utilization of the administration.

d) Perceived Risk (PR)
Consumer’s perceived risk was recognised by designated consumers and MM experts interviewed as a critical boundary for MM transactions (Tobbin 2011). Perceived Risk is explained here as a consumer’s belief about the possible adverse results from the mobile money exchange. Bauer et al., (2005) asserted that, consumers longing to abate risk surpasses their ability to maximize utility and, in this manner, their subjective risk perception emphatically decides their conduct. In this manner Chen (2008) discovered that reducing uncertainty positively impacts consumers' aim to adopt electronic transactional systems.
e) **Perceived Cost (PC)**

It is the risk associated with a customer perception of a particular online channel (mobile money services in our study) costing more money that alternative channels of purchase (Luarn & Lin, 2005). Research has empirically demonstrated that mobile money service adoption is highly encouraged or discouraged by economic factors such as transaction service fees or concerns on basic fees for connecting to mobile payment services (Yang, 2009). The cost of using the service is the monetary perceived costs and the high perception of fees would decrease perceived value. Extant studies have shown that perceived cost negatively affects perceived value of the mobile internet (Kim et al., 2007b). Varshney (2002) mentioned two costs that come with mobile money services payment. The initial cost is for the infrastructure that is managed by the MNO, financial institution, or the merchant and the second cost that is the cost that is borne by the consumers. These costs include set up fees, transactional fees and subscription fees.

Some of the studies conducted in emerging economies like China (Yao & Zhong, 2011), Brazil (Cruz et al., 2010) and Bangkok (Sripalawat et al., 2011) have specifically found perceived cost of use as a barrier to usage intention and perception on usefulness of mobile money services.

f) **Social Influence**

Social Influence is defined as the degree to which an individual friends/colleagues, family members and other close relatives perceives the importance to use the new system (Ajen & Fishbein, 1980; Choi, Choi, Kim & Yu, 2003; Venkatesh, Morris, Davis, & Davis, 2003). Fishbein and Ajzen (1975) posited that social influence is one’s perception that those who are important to her or him should or should not perform the behaviour in question. The unbanked populace may
be forced to use mobile money as it can be used to perform those services as saving, transferring and receiving money. Notwithstanding that, families and friends who are using mobile money can influence others to use. As noted by (Tan & Teo, 2000), relevant references such as the adopter’s friends, family and colleagues/peers may all influence the adoption decision.

1.6 Scope of the Study

The study will focus on assessing the adoption of mobile money services among customers of two commercial banks in Ghana. The selected Commercial Banks which will form the units of analysis are GCB Bank and Fidelity Bank. The study will focus on only the High Street Branch of GCB and Ridge Branch of Fidelity Bank Ghana Limited. The rational for selecting these banks is their appreciable integration into the current mobile money ecosystem. Mobile Money services in the study will be limited to the money transfer (Cash in and Cash out) and payments (eg. DSTV, ECG, Ghana Water, etc). The focus will also be on banked customers and not the unbanked.

1.7 Significance of the Study

This study will be of significant benefit to different stakeholders in the mobile financial industry. Management of commercial banks will use data from this study to help them analyse and assess the adoption of Mobile Money services by customers in their various banks. Through the findings of this study, management of these institutions could develop strategies to partner mobile money agencies and Mobile Telecommunication companies on the best business models to adopt to fulfil the financial inclusion.

Policy makers and agencies like the National Communication Authority, Bank of Ghana, Ministry of Finance and Economic Planning, will benefit from this study, as a source of material to facilitate
policy formulation on the best regulations for mobile money services in Ghana. It will also improve policy direction with respect to mobile banking as a catalyst for economic growth.

The study will provide immense benefit to academicians and students of Telecoms, Finance and Banking in building the knowledge base in those disciplines, by adding to existing literature on mobile money, Mobile banking and financial inclusion. The study will be a source of reference material besides suggesting areas of further research.

1.8 **Research Environment**

The research environment will focus on two (two (2) commercial banks; GCB Bank and Fidelity Bank Plc. There will supporting evidences from MTN Ghana and Vodafone Ghana.

1.8.1 **GCB Bank**

GCB Bank limited started operations in 1953 as the Bank of Gold Coast to provide banking services to the emerging nation for socio-economic development. According the GCB bank website, “the Bank’s main purpose was to pay special attention to Ghanaian traders, business people and farmers who could not elicit support from the expatriate banks. In 1957, when Ghana achieved independence, Bank of Ghana was set up as the national bank while Bank of Gold Coast was renamed Ghana Commercial Bank to center exclusively on commercial banking services. Since then, GCB has opened branches across the length and breadth of the nation tapping the potential of the 10 regions that make Ghana. The Bank was entirely government owned until the point when 1996 when under the monetary recuperation program some portion of the
administration possession was stripped. Today, government proprietorship remains at 21.36% while institutional property means 78.64%. From the one branch of the 1950s, GCB presently has 143 branches and 11 offices all through the nation. Can boast of excellent human resource, which remained at 2,200 as at the end of 2007. This is noteworthy considering that the Bank began with a staff quality of 27”. (Ghana Commercial Bank, Annual Report 2015)

1.8.2 **Fidelity Bank Ghana Limited**

Fidelity Bank was the 22nd bank to be authorized by the Bank of Ghana under the new Banking Act, 2004 (Act 673) on the 28th of June 2006 when it was issued it universal banking license. According to Fidelity Bank website, “the Bank is owned by Ghanaian individuals, other institutional investors and its senior executives. The Bank was previously Fidelity Discount House, Ghana’s leading discount house in. After 8 years of operating profitably, the business environment in the country attracted investors to the idea of establishing a bank. Fidelity Bank offers a comprehensive range of products and services to meet the banking and financial needs of existing and potential customers and to do this, constant investment in technology and continuous training of staff to ensure that it is at par with the best in the world has been a hallmark of the bank. Fidelity Bank’s vision is to become a world-class financial institution that provides superior returns for all stakeholders” (Fidelity Bank, Annual Report 2017).

1.9 **Ethical Considerations**

The study is conducted within the remit of the laid down policies and procedures in academia and under the strict conduct of the university principles. The research also adheres to the University of Ghana codes and conduct governing research studies. All participants engaged during the research were informed of the risks and procedures and were required to give their consent prior
to the discussion. The study will hold in confidence and trust the information to be provided by the research participants. Finally, all material sources used for the entire work have been duly acknowledged.

1.10 Description of Chapters

The study has been divided into Six (6) chapters. Chapter one, this has the introductory chapter which provides an outline of the research, it covers areas such as the background to the study, statement of the problem, purpose of the study, scope of the study, significance of the study, and the organization of the study. Chapter two deals with literature review of related literature. Chapter three presents the methodology of the research. It includes research design, selection of subjects, and population of the study, sample size, sampling techniques, data collection instrument data collection analysis and presentation of data. Chapter four presents the analysis of the data. Chapter five discusses major findings. Chapter six is the final chapter handles the summary of the findings, conclusion and the recommendations of the study.
CHAPTER TWO
LITERATURE REVIEW

2.1 Introduction

Literature review discovers conflicts, contradictions and variables in other research work (Ankrah, 2014). It shows gaps in the research to pinpoint areas worthy of additional study. It also explains the ramifications of the problem to show how each research contributes another aspect of the problem and solution. As a result, this section of the research is devoted to examine relevant literature related to the subject matter in order to identify and address that gaps in literature to better improve understanding on the subject.

2.2 Mobile Money

According to Bampoe (2015) “the concept of mobile money became known from the mobile industry and financial gurus with remarkably little academic literature”. Recently, Diniz and Cerney (2011) have demonstrated that, of the majority of literature based on mobile payment cases from the advanced world, with little or no reference to mobile money as a developmental tool for countries in the low-income bracket. Specifically, “it became crystallized as a payment system based on mobile phones after the first two Mobile Money Summits in 2008 and 2009” (Maurer, 2012). Accordingly, to Dolan, (2009) “it is also referred to as a suite of financial services offered through mobile phones and other handheld mobile devices”.

According to Jenkins (2018), “money that can be accessed and used via mobile phone is referred to as mobile money”. Other scholars like Dolan (2009) has stated that, “mobile money is a suite
of financial services offered through mobile phones and other handheld devices”. Mobile money services relate peer to peer transfers, international remittances (both domestic and international), Airtime top up, retail payments and mobile banking, school fees payment, among others. The study will adopt mobile money services specifically, transfers (cash in and out,) and payments for retails transactions (cable TV, utility bills etc). These services include “the capability of turning a mobile device into a business tool, substituting or complementing banks, ATM and credit cards” (Vashney & Vetter, 2002).

The various terms that relate to the use of mobile phones to access, store, and transfer or link to an account, such as, “mobile banking”, “mobile payments (m-payment)”, “mobile money transfer” and “mobile microfinance” are collectively referred to as Mobile Money (MM) in this study. Furthermore, this study will adopt a definition of mobile money as, mobile phone-enabled monetary and banking services including, money transfers (person-to-person, business-to-person, etc), payments (retail shopping, restaurant, utility, etc) and financial services (credit/loans, insurance, savings, and salaries). The components of focus in this study are the transfers and financial services elements which have a direct impact on commercial banking.

In the view of Bampoe (2015), inspired by the success of M-PESA in Kenya, many mobile money services have been deployed in recent years in the developing economies. Majority (84%) out of the over 90 deployments of the mobile money platform implementations around the world have been done from 2015- 2018 (Juniper Research, 2011; Donovan, 2012; Cobert et al., 2011). However, only a few of these implementations have been successful and are currently making
waves in their various countries. There are some skepticism of whether the success of MPESA in Kenya and other Caribbean test cases can be replicated across the world.

2.3 Impact of Mobile Money transfer and key drivers

Mobile Money services has totally transformed and enhanced financial inclusion worldwide (GSMA 2016). Mobile money services have dominated the discussion on financial inclusion globally. It has been very pervasive and has assumed a global dimension, heavily prevalent in Latin America and the Caribbean, Asia in countries like India, Singapore, etc. and Africa- Kenya, Tanzania, Ghana, among others.

2.3.1 Global View of Mobile money

SMART Money one of the first mobile money service be introduction in the Philippines in 2003, “since then there have been 145 mobile money deployments which have been launched across 73 developing countries” (MMU, 2012). Currently, the most successful mobile money service is “Safaricom’s M-PESA in Kenya. Since its launch in March 2007, it has been adopted by 11.7 million customers (corresponding to 54% of Kenya’s adult population and 73% of Safaricom’s subscriber base) and the total transactions nationally is more significant than Western Union does globally. US $415 million per month in person-to-person transfers, equal to 17% of Kenya’s 2009 GDP on an annualized basis” (Mas & Radcliffe, 2010).

At the close of 2008, M-Pesa in Kenya made becoming the foremost mobile money service provider to attain the one million active account marks (GSMA 2012). Anxious for the next big success story, industry analysts examined the mix of factors that enabled viral uptake, taking a
keen interest in why M-Pesa was off to a slower start in neighboring Tanzania. Two years later, Tanzania was the next country to reach the one million subscribe milestones. This effectively debunked the theory that a majority market share of mobile communications was a prerequisite for success. Tanzania also later showed that multiple services could thrive in one market (GSMA 2012). By the end of 2013, the bright lights of the mobile money industry had expanded beyond East Africa. The Global Findex Survey 2015 showed that, "the number of unbanked people globally had dropped from 2.5 billion to two billion in just five years. Much of the gain in low-income countries has been attributed to the spread of mobile money, the biggest impact was felt in Sub-Saharan Africa, where 12 per cent of adults in the region had a mobile money account". Therefore, it is not surprising that in 2015, mobile money accounts exceeded bank accounts in the region (GSMA 2015).

2.3.2 African Situation – The Success story of MPESA in Kenya

Some researchers have argued that at least two countries have to be looked at in order to understand the factors that influence dispersion of mobile money (see in Bampoe, 2015). Others have adopted a more holistic strategy which clarifies the empowering situations that impacts Mobile Money acceptance in a country (Heyer & Mas, 2011). Heyer and Mas (2011) gave an arrangement of five motives that could influence the usage of mobile money and thus its realisation. They are grades of inactive attention for interactions, scope of nature of prevailing options, administrative condition, retail scene and cell advertise scene.

Kapoor and George et al (2013) broke down the dispersion of 17 Mobile Money situations round the world with a specific end goal to discover the basic achievement factors. The key perspectives
incorporated into their article are administrative scene, financial conditions, phase of market improvement, and profile of specialist co-ops and part of supporting foundations, dealing with the client offer; channel administration; innovation and user interface. Ayo et al. (2012), explained that “M” is mobile and “PESA” remains for currency in Swahili, with respect to M-PESA, which is the country's mobile money organization. Fengler (2012) expressed that, Kenya’s MPESA has developed to be a pioneer in mobile disbursements and IFC (2011b), likewise included that Kenya has on record as being an effective and an emerging nation for m-money use, this is due to the fact that more than 80% of the population, of mobile telephone clients utilize the disbursement system. Nonetheless, the number of inhabitants in mobile money clients on the planet are more than 60 million, Kenya has one out-third of the clients (Fengler, 2012). The variables added to the accomplishment of M-PESA in Kenya are: nature of option budgetary administrations, nature of existing monetary administrations framework, market offer of specialist organisation, urbanisation, directions, budgetary education, level of economic development, operator arrange, a value attached to remittance and budgetary independence.

- **Quality of alternative financial services**

As indicated by Bampoe (2015), “mobile money is more prone to be received if the nature of the elective remittance channels, for example, payment cards (charge and Mastercards), and bank offices are low”. Prior to the application of M-PESA, the mutual methods for remittances in Kenya included utilizing mail station, transport corporations, through individuals or friends and specifically venturing out to send the conveyance (Morawczynski, 2008; Kabbucho et al., 2003). The utilization of the mail station money payment benefit was seen by many Kenyans as costly and awkward because of inadequate areas and complex client charges (Mas & Ng’weno, 2010).
Furthermore, alternate techniques of conveying money were: risky, as one could be effectively assaulted or burglarized; questionable, in light of the fact that there was no certification that the money could achieve the proposed goal or be gotten inside the planned time; and time involved, as one would need to mark designs and require significant investment off effort to set out up nation to convey the money. These circumstances encouraged the speedy implementation of M-PESA in Kenya, which provided a better administration than other systems.

- **Quality of existing financial services infrastructure**

  The entrance proportion of monetary administrations has set up as an important impact on the degree of mobile money acceptance. As per the research available, low quality of existing customary monetary administrations, for example, banks advance the appropriation of mobile money administrations, which offer productivity, more noteworthy openness, and more comfort nearly. In any case, extremely poor budgetary administrations framework can likewise crash the selection of mobile money benefits by generating it all the more trying for service providers and operators to be able to deal with their liquidity (Camner and Sjoblom, 2009).

- **Market share of service provider**

  Reputation impacted the selection of mobile money benefits by supporting mindfulness around the handiness of the support of likely clients. When M-PESA was being dispatch, Safaricom had a market offer of 80 percent, which was highly associated with different marketplaces (TCRA Statistics, 2009; Safaricom Statistics, 2009). The better supremacy of Safaricom empowered it than profitably place itself against its opponents once it unrolled the M-PESA system in the country in this manner securing more clients comparatively. This is on account of the current system of
Safaricom mobile telephone clients gave a prepared market to the firm to rapidly grasp and catch a more extensive marketplace for its M-PESA benefit (Donovan, 2011; Heyer & Mas, 2011).

- **Urbanisation**

The developed degree of urbanization is ascribed to Kenya's private enterprise expansion belief system, and strategies that supported urbanization by revolutionizing the urban zones and leaving the rustic territories to a great extent immature (Camner and Sjoblom, 2009; Ross & Weisner, 1977). This impacted individual leaving in rustic territories, particularly the men who mostly are the family heads, migrate to urban zones for greener pastures. Notwithstanding, the current social norms, for example, genealogical terrestrial legacy made the requirement for urban travelers to keep bonds with their provincial families, which were fortified through constant sending of money back home to their various families (Morawczynski 2011). This brought about the growth of a main urban-rural transfer of money that has impacted the noteworthy selection of M-PESA in Kenya.

- **Regulations**

The controls established to oversee mobile money activity can either encourage or compel the utilization of a mobile money benefit in two key ways. To begin with, controls could impact the organization of the plan of action, which regulates the capacity of a mobile money supplier towards rapidly achieve a more extensive line of customers or to rule out operators (Heyer & Mas, 2011; Economic Forum, 2011).
Financial literacy

Different researchers and specialists show that the utilization of monetary services have increased through the degree of training (Cole et al., 2011; Nunoo & Andoh, 2011). For the most part, education is important in the arrangement of mobile money administrations in light of the fact that the item conveyance stage, a mobile gadget, involves a person to have the fundamental learning taking place by the most proficient method to peruse the mobile gadget screen. Nonetheless, the requirement for monetary proficiency is much more important in light of the fact that it improves access to and use of budgetary administrations. Thus, clients are furnished with the ability to measure the estimation of an administration and to request for new esteem included mobile money administrations. The 2006 FinScope overview shows that preceding the dispatch of M-PESA in Kenya and Tanzania; these nations had an inadequate monetary infiltration. In any case, the budgetary access level was considerable lesser in Tanzania which had a prohibition frequency of around 54 rates in relation to Kenya at 38 percent (FinScope, 2006; FinAccess, 2007). It shows the level of monetary mindfulness was more prominent in Kenya.

Level of economic development

On the introduction of M-PESA, Kenya was a more grounded economy with a GDP for every capita of almost US$ 700, one which is high (World Bank, 2010). This moderately more grounded level of economic growth empowered Safaricom to fabricate a more extensive and proficient specialist arrange since the current line of airtime vendors generally consisted of of SMEs with numerous wholesale channels which developed some portion of its broad retail organize (Heyer and Mas, 2011; Camner et al., 2009). Moreover, Kenya’s solid economy additionally had a
repercussion on the level of the managing an account system advance that is somewhat ascribed towards the accomplishment of M-PESA.

- **Agent network**

Effective mobile money tasks remain sustained by a broad system of well-trained mediators that offer the cash in/cash out points at the local level (Heyer & Mas, 2009). Mediators are precisely vital in aiding a money mobile service provider to accomplish proficiency in service provision by providing consistent services and responding to consumer queries and which help contribute to establishing integrity and confidence in the usage of the package (Mas & Radcliffe, 2010; Morawczynski & Miscione, 2008).

- **A culture of remittance**

The flexible culture of sending money to families in Kenya is an extra impact that has added to the better acknowledgment of M-PESA in Kenya. Survey of the writing demonstrate that how much the utilization of portable cash is adjusted with a man's past encounters, social standards and social qualities impacts the conduct purpose to receive the administration (Brown et al., 2003, 384; Schierz et al., 2010; Biljon and Kotze, 2008). Further, Morawczynski (2011) features that the expansion of socio-specialized frameworks, for example, M-PESA rely on their adjustment to the "social practices and neighborhood frameworks of rationale. The “send money home” plan that was integral to the advertising advancements plainly imparted the utilization of the framework in Kenya, the "Send money home" message was all around altered to the overarching society of settlement. Split familial structures are a typical component in Kenya's rustic families because of common provincial urban movement. The urban transients keep in contact with their families by
sending cash to their country homes. In this way, the “Send money home” recommendation resounded well with the current routine with regards to sending cash to the provincial home (IFC Report, 2011b).

- Financial autonomy

Another social angle that supported the execution of M-PESA in Kenya is its impact to expanding the budgetary freedom of the less independent individuals from a family unit that oftentimes are incorporate low salary women. In most Kenyan people group, the conventional practices, for example, sole responsibility for assets by the men have helped to constrain ladies' arranging power inside the family. Thusly, ladies have frequently sought after different other options to deal with their salary, which incorporate joining casual reserve funds gatherings, for example, ROSCAs and ASCAs.

2.3.3 African Situation – Mobile Money services in Côte d’Ivoire

According to the GSMA report (2015) on “Driving mobile-enabled digital transformation”, digital technology in Côte d’Ivoire is evolving rapidly, leading to the emergence. The report noted that by 2015, only one in 10 people in Côte d’Ivoire subscribed to a mobile service. Within 10 years this had increased to more than half the population. In 2010, the vast majority of people in Côte d’Ivoire had no internet access, but within five years almost a quarter of the population were using the internet via mobile, one of the highest rates in West Africa. By contrast, only 3% of the population have access to a fixed broadband connection and only 7% have access to a fixed telephone line. In 2020, GSMA Intelligence forecasts almost half the population will use mobile internet services. Mobile technology has also driven significant progress in financial inclusion.
While 15% of the adult population have an account at a formal financial institution, around a quarter have a mobile money account, by far the highest penetration rate in West Africa and the fifth highest in the world, according to Findex 2014.

The Mobile Money case in Cote d’Ivoire present a unique and different model. The GSMA study Mobile Money in Cote d’Ivoire (2014): A turnaround story noted that, “after a challenging start, mobile money is taking off in Côte d’Ivoire. In June 2013, CelPaid, Moov, MTN, Orange, and Qash Services had together registered close to 5 million mobile money accounts, 35% of which are active. However, it is only recently that Ivoirians have started to adopt mobile money. In December 2011, three years after the launch of the country’s first mobile money service, there were just over 2 million registered accounts and 22% were active. Mobile Money services have gained traction over the period”.

Figure 2.1 Mobile Money Service in Cote D’Ivoire

<table>
<thead>
<tr>
<th>MOBILE MONEY SERVICE</th>
<th>SERVICE PROVIDER</th>
<th>DATE OF LAUNCH</th>
</tr>
</thead>
<tbody>
<tr>
<td>Orange Money</td>
<td>Orange in partnership with BICICI (BNP Paribas)</td>
<td>December 2008</td>
</tr>
<tr>
<td>MTN Mobile Money</td>
<td>MTN in partnership with SGBCI (Société Générale)</td>
<td>October 2009</td>
</tr>
<tr>
<td>CelPaid</td>
<td>CelPaid</td>
<td>February 2011</td>
</tr>
<tr>
<td>Flooz</td>
<td>Moov in partnership with BIAO</td>
<td>January 2013</td>
</tr>
<tr>
<td>Mobile Banking</td>
<td>Qash Services</td>
<td>November 2013</td>
</tr>
</tbody>
</table>

Source: GSMA (2015)
The World Bank Report (2014) revealed that, Ivorian’s are abandoning banks in favor of mobile phone companies. In 2014, more people had mobile money accounts (24%) than had bank accounts (15%). Indeed, the percentage of adults with a mobile money account in Côte d’Ivoire is the fifth highest in the world, after Kenya (58%), Somalia (37%), Uganda (35%), and Tanzania (32%). Fewer than five years after its arrival in Côte d’Ivoire, mobile money has become one of the populations most frequently used means of conducting financial transactions. The Côte d’Ivoire Telecommunications Regulatory Authority (ARTCI) estimates that of the 24 million mobile phone subscribers in June 2015, 7.2 million have mobile money accounts. In the first six months of 2015, revenue from withdrawals, transfers, and bill payments totaled 17 billion West African francs, or about $28 million.

According to the Findex (2014), Côte d’Ivoire has the highest mobile money penetration levels in West Africa, and a quarter of the adult population have a mobile money account. In June 2016, 72% of mobile money users subscribed to Orange Money, followed by MTN with 22% and Moov with 7%. Mobile money accounted for around 5% of operators’ recurring revenues. The GSMA report and the diagram below (figure 2.0) stressed that, the most obvious external factor driving the adoption of mobile money in Cote d’Ivoire has been the country’s return to civil peace and economic recovery in 2012. Mobile money services allow households to make and receive payments and transfers much more easily, and allows agricultural producers, particularly small-scale farmers, to replace inefficient cash payments with digital payments. It has also made the payment of secondary school fees much easier. In 2011, 60% of school registration fee payments were made digitally, of which 3% were via mobile money. By 2015, “99% of school registration fee payments were made digitally, 94% of which were via mobile money” (GSMA, 2015).
2.3.4 Mobile Money Services in Ghana

A large number of the people in rising economies such as Ghana do not have avenue to banks, credit unions or similar financial services (Hinson, 2011). Studies show that, only 3 out of 10 of the Ghanaian matured population have banking accounts or do use fiscal services, this is due to the society being cash-driven and not solely based on difficulties with respect to money, but travel-range, and the huge paper details associated. Based on the statistics here are 33 international banks and over 110 urban and rural banks currently operating across the entire nation (Bank of Ghana Annual Report, 2016). According to the Bank of Ghana report (2016) 52 percent of the bank account holders are urbanized. Seven percent (7%) out of the data available use the accounts to receive government payments, securing of loans with these accounts forms six percent 6%, individuals who use these accounts for remittances form 11.7% and Accounts for salaries take up 11.2% (World bank, 2011).
The traditional way of setting up bank accounts at the banking halls is one of the reasons the transfer of money using mobile phones was introduced. This is one of the methods people without bank details were drawn into the banking world (Hinson, 2011). Across the globe, millions of lives are transforming through the newest electronic banking innovation and revolution (Uzor, 2011). Many sectors of the Ghanaian economy are expected to benefit from this innovation that can help grow our economy and help commercial incorporation (Hinson, 2011).

Bank of Ghana’s implementation of the regulatory framework which gives the lead role to financial institutions makes mobile money services in developing economies like Ghana have an open scheme processes, where the transfer and receiving of moneys between customers is made easier (Ayo et al., 2012). Ghanaians rely very minimal on the use of mobile money medium for payments. The sending and receiving of money through the mobile phone is just between 1-1.5% percent of the adult population and only 0.9 percent use the mobile phone to pay bills Sedro (2013). According to (NCA website) the total number of mobile phone subscribers has hit 37 million at the end of September 2017.

It is conceived that, there will be an increasing acceptance of mobile money services for the payment of goods and services. The table below (Table 2.1) gives the total voice subscription in Ghana at the end of September 2017. The Ghanaian population that accepted the service were less than 1% by 2010 and according to the Bank of Ghana Annual Report 2016, there were 19 million active users at that moment.
### Table 2.1: Mobile Voice Subscription

<table>
<thead>
<tr>
<th>MNOs VOICE SUBSCRIPTION TRENDS 2017</th>
<th>April</th>
<th>May</th>
<th>June</th>
<th>July</th>
<th>August</th>
<th>September</th>
</tr>
</thead>
<tbody>
<tr>
<td>MILLCOM (TIGO)</td>
<td>5,187,936</td>
<td>5,342,817</td>
<td>5,360,443</td>
<td>5,510,992</td>
<td>5,505,146</td>
<td>5,489,994</td>
</tr>
<tr>
<td>SCANCOM (MTN)</td>
<td>16,969,311</td>
<td>17,119,549</td>
<td>17,304,425</td>
<td>17,654,968</td>
<td>17,715,212</td>
<td>17,817,273</td>
</tr>
<tr>
<td>VODAFONE MOBILE</td>
<td>8,651,515</td>
<td>8,737,414</td>
<td>8,773,444</td>
<td>8,920,617</td>
<td>9,108,424</td>
<td>9,079,502</td>
</tr>
<tr>
<td>AIRTEL</td>
<td>4,398,913</td>
<td>4,309,982</td>
<td>4,236,788</td>
<td>4,217,490</td>
<td>4,244,759</td>
<td>4,253,993</td>
</tr>
<tr>
<td>GLO MOBILE</td>
<td>753,341</td>
<td>745,271</td>
<td>732,483</td>
<td>809,269</td>
<td>812,904</td>
<td>781,022</td>
</tr>
<tr>
<td><strong>TOTAL MOBILE</strong></td>
<td>35,984,280</td>
<td>36,278,297</td>
<td>36,430,847</td>
<td>37,136,600</td>
<td>37,409,709</td>
<td>37,445,048</td>
</tr>
<tr>
<td><strong>MONTH OVER MONTH GROWTH</strong></td>
<td>0.57%</td>
<td>0.62%</td>
<td>0.42%</td>
<td>1.94%</td>
<td>0.74%</td>
<td>0.09%</td>
</tr>
</tbody>
</table>

### Table 2.2 Mobile Money Subscription

<table>
<thead>
<tr>
<th>Indicators</th>
<th>2012</th>
<th>2013</th>
<th>2014</th>
<th>2015</th>
<th>2016</th>
<th>Change 2016 (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total number of mobile voice subscription (Cumulative)¹</td>
<td>25,818,427</td>
<td>29,026,482</td>
<td>30,380,771</td>
<td>35,008,387</td>
<td>37,369,668¹</td>
<td>6.74</td>
</tr>
<tr>
<td>Registered mobile money customers (Cumulative)</td>
<td>3,778,374</td>
<td>4,383,721</td>
<td>7,167,542</td>
<td>13,120,367</td>
<td>19,735,098</td>
<td>50.42</td>
</tr>
<tr>
<td>Active mobile money customers²</td>
<td>345,434</td>
<td>981,780</td>
<td>2,526,688</td>
<td>4,869,569</td>
<td>8,313,233</td>
<td>70.75</td>
</tr>
<tr>
<td>Registered Agents (Cumulative)</td>
<td>8,660</td>
<td>17,492</td>
<td>26,899</td>
<td>79,747</td>
<td>136,769</td>
<td>71.50</td>
</tr>
<tr>
<td>Active Agents³</td>
<td>5,900</td>
<td>10,404</td>
<td>20,722</td>
<td>56,270</td>
<td>107,415</td>
<td>90.89</td>
</tr>
<tr>
<td>Total volume of transactions</td>
<td>18,042,241</td>
<td>40,853,559</td>
<td>113,179,738</td>
<td>266,246,537</td>
<td>550,218,427</td>
<td>106.66</td>
</tr>
<tr>
<td>Total value of transactions (GHS million)</td>
<td>594.12</td>
<td>2,652.47</td>
<td>12,123.89</td>
<td>35,444.38</td>
<td>78,508.90</td>
<td>121.50</td>
</tr>
<tr>
<td>Balance on Float (GHS million)</td>
<td>19.59</td>
<td>62.82</td>
<td>223.33</td>
<td>547.96</td>
<td>1,257.40</td>
<td>129.47</td>
</tr>
</tbody>
</table>

Source: BOG Annual Report (2016)
Ghanaian mobile money operators are being innovative by participating in the m-banking industry, to find a way of delivering a new variety of services to their current clients and adding up new subscribers (Krugel, 2007). The Government of Ghana (GoG) and the Bank of Ghana (BoG) have reviewed the current EMI- guidelines allowing MVNOs to operate independent companies to fully run the Mobile Money operations. The current mobile money situation in Ghana is stated clearly in Table 2.2. Statistics made by Bank of Ghana in 2016, shows the volume annual transaction of mobile money in Ghana stands at 550,218,427 representing 107% increase from its inception in 2009. The total value is estimated to be 78,508,90 representing an increase of 122%. The increases in mobile money recognition will increase this figure significantly and bring stakeholders a lot of benefits.

Ghana has three (3) main telecom providers, providing money services including, thus, MTN – MTN mobile money (MTN MoMo), AirtelTigo - AirtelTigo money; and Vodafone – Vodafone cash. There is a Ghana Interbank Payment and Settlement Systems (GhIPSS) that allows the customers to ensure cross-network amongst that mobile networks and banks. MTN, Ghana’s leading telecommunications mobile network provider has the highest number of mobile money subscribes. MTN has a “record 11.6 million registered mobile money wallets which currently represents a 93.9% market share of the mobile money float” (ModernGhana Business Desk, 2018).

Table 2.3 blow shows MTN mobile money regional performance.
However, with the increased awareness and growing number of transactions on the MTN MoMo platform, comes with the associated risk of fraudulent individuals taking advantage of unsuspecting customers to dupe them of their hard-earned funds. The activities of these fraudsters who in some instances pose as “staff of MTN” have led to some customers losing thousands of Ghana cedis and thus, giving the service a bad name. The anti-fraud campaign is intended to educate customers on the various fraud trends and how they can secure their MoMo wallets and manage their PIN safely. The objective of the plan is to layout the various channels to be employed

<table>
<thead>
<tr>
<th>Region</th>
<th>Registered</th>
<th>Active</th>
<th>% Contri.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ashanti Region</td>
<td>4,037</td>
<td>2,349</td>
<td>58%</td>
</tr>
<tr>
<td>Brong Ahafo Region</td>
<td>3,301</td>
<td>1,144</td>
<td>35%</td>
</tr>
<tr>
<td>Central Region</td>
<td>2,855</td>
<td>1,747</td>
<td>61%</td>
</tr>
<tr>
<td>Eastern Region</td>
<td>485</td>
<td>323</td>
<td>67%</td>
</tr>
<tr>
<td>Greater Accra Region</td>
<td>6,074</td>
<td>2,808</td>
<td>46%</td>
</tr>
<tr>
<td>Northern Region</td>
<td>1,571</td>
<td>1,044</td>
<td>66%</td>
</tr>
<tr>
<td>Upper East Region</td>
<td>683</td>
<td>389</td>
<td>57%</td>
</tr>
<tr>
<td>Upper West Region</td>
<td>551</td>
<td>245</td>
<td>44%</td>
</tr>
<tr>
<td>Volta Region</td>
<td>752</td>
<td>314</td>
<td>42%</td>
</tr>
<tr>
<td>Western Region</td>
<td>4,241</td>
<td>1,388</td>
<td>33%</td>
</tr>
<tr>
<td><strong>Grand Total</strong></td>
<td><strong>24,550</strong></td>
<td><strong>11,751</strong></td>
<td><strong>48%</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Region</th>
<th>Registered</th>
<th>Active</th>
<th>% Contri.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ashanti Region</td>
<td>4,739</td>
<td>4,446</td>
<td>94%</td>
</tr>
<tr>
<td>Brong Ahafo Region</td>
<td>3,679</td>
<td>2,733</td>
<td>74%</td>
</tr>
<tr>
<td>Central Region</td>
<td>3,215</td>
<td>2,445</td>
<td>76%</td>
</tr>
<tr>
<td>Eastern Region</td>
<td>2,653</td>
<td>1,740</td>
<td>66%</td>
</tr>
<tr>
<td>Greater Accra Region</td>
<td>10,750</td>
<td>7,525</td>
<td>70%</td>
</tr>
<tr>
<td>Northern Region</td>
<td>1,242</td>
<td>1,099</td>
<td>88%</td>
</tr>
<tr>
<td>Upper East Region</td>
<td>581</td>
<td>444</td>
<td>76%</td>
</tr>
<tr>
<td>Upper West Region</td>
<td>606</td>
<td>493</td>
<td>81%</td>
</tr>
<tr>
<td>Volta Region</td>
<td>3,052</td>
<td>2,067</td>
<td>68%</td>
</tr>
<tr>
<td>Western Region</td>
<td>2,772</td>
<td>1,893</td>
<td>68%</td>
</tr>
<tr>
<td><strong>Grand Total</strong></td>
<td><strong>33,289</strong></td>
<td><strong>24,885</strong></td>
<td><strong>75%</strong></td>
</tr>
</tbody>
</table>

Table 2.3 Registered Payments Profile / Transacting
in disseminating anti-fraud information and communication to the different segments of the market to help curb the incidence of MoMo fraud to the barest minimum and also focus on the positives of MoMo to individuals, businesses, government and its socio-economic impact on the society as a whole. Table 2.4 shows MTN mobile money anti-fraud campaigns.

Table 2.4 Anti-Fraud Campaigns for MTN MoMo

<table>
<thead>
<tr>
<th>Campaign Name</th>
<th>Channels</th>
<th>Target</th>
<th>Campaign Objective</th>
</tr>
</thead>
<tbody>
<tr>
<td>MoMo Trust</td>
<td>•TV</td>
<td>General public</td>
<td>•Educate customers on keeping their MoMo wallet safe.</td>
</tr>
<tr>
<td></td>
<td>•Radio jingle</td>
<td></td>
<td>•Encourage customers to spread the info through word of mouth.</td>
</tr>
<tr>
<td></td>
<td>•LPM</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>•Press</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>•TV Crawlers</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MoMo Fraud Alert Videos (Kwame Citizen)</td>
<td>Facebook</td>
<td>Digital followers</td>
<td>Educate customers on fraud trends</td>
</tr>
<tr>
<td></td>
<td>•Whatsapp</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MoMo Fraud SMS</td>
<td>•Bulk SMS</td>
<td>MoMo base</td>
<td>Customers on fraud</td>
</tr>
<tr>
<td>MoMo Security Tips</td>
<td>•Facebook</td>
<td>Digital followers</td>
<td>•Educate customers with security tips to keep their wallet safe</td>
</tr>
<tr>
<td></td>
<td>•Instagram</td>
<td></td>
<td>•Encourage customers to spread the info through word of mouth.</td>
</tr>
<tr>
<td></td>
<td>•Twitter</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>•LED screens in MTN offices</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Agent Education</td>
<td>•Agent Forum</td>
<td>MoMo Agents</td>
<td>Educate agents/merchants on fraud trends</td>
</tr>
<tr>
<td>Staff Education</td>
<td>•Postmaster</td>
<td>MTN Staff</td>
<td>•Sensitize staff on fraud tips.</td>
</tr>
<tr>
<td></td>
<td>•CDF</td>
<td></td>
<td>•Encourage staff to spread the info through word of mouth.</td>
</tr>
<tr>
<td></td>
<td>•ManComm</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Customer Education</td>
<td>•Direct Consumer Contact (DCC)</td>
<td>MoMo Customers</td>
<td>•Educate customers on fraud trends and security tips.</td>
</tr>
</tbody>
</table>
• Community Radio Fraud Education
• MTN events

<table>
<thead>
<tr>
<th>3 Golden Rules - Pull-up banner</th>
<th>• MTN Service Centers</th>
<th>• Walk-in customers</th>
<th>Educate customers and guests on the 3 golden rules to keep your account safe</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>• MTN indoor events</td>
<td>• Event guests</td>
<td></td>
</tr>
</tbody>
</table>

**2.4 Mobile Money Ecosystem**

Mobile money is a key part of the wider payments ecosystem. The mobile money journey denotes the potential to reach the underprivileged. To ensure that mobile money services surpass to all areas of the financial sequence, interoperability transpired as a topic of debate. Regulators, policymakers, international organisations called on providers to interconnect their platforms and to cooperate to expand the reach of agent distribution networks. The scheme started as an ongoing discourse around interoperability use cases, priorities, network effects, and competition drivers. As the industry prioritized specific interoperability use cases based on market conditions and commercial opportunities, both the commercial results and progression became comprehensible (Bampoe 2015). Below is a diagram which depicts the key stakeholders and their roles in the ecosystem using Tobin’s (2011) model.
a) Mobile Network Operator (MNO)

Assets and capabilities are the key items making the MNOs important components in the mobile money ecosystem (Merrit, 2010). The prodigious existing distribution channels of the MNOs used for the sale of subscriptions and prepaid credits is added, which are more extensive than the branches of the financial institutions. Relevant prepaid cards are sold by an agent of a distributor wherever there is coverage. As advanced by Jenkins (2008), their ability to reach all the money-making departments gives them the propulsion to be the leading players in the mobile money ecosystem. Usually the mobile network operator is linked to the customers in a mobile money ecosystem.

b) Financial Institutions (Banks)

Primarily, financial institutions function as Payment systems and mechanisms to reserve worth. Financial institutions come into the mobile ecosystem with their ability to meet a large number of
customers and the confidence their customers have in them. They provide trusted accounts and banking license to store the mobile money customers’ deposits. Financial institutions have branch offices which act as collection points for the distribution channels and their agents and merchants. In most situations, mediation between the MNOs and the agents in the acquisition of the e-value are the banks. In the case of merchants, existing merchant accounts are equipped with access between the e-float account and the main account to speed up transfer of money. They also provide internet banking integration to the m-commerce system of the MNOs to catalyze transactions. The financial institutions are solely mandated to handle foreign disbursements and settlements. Regulatory advice to the MNOs is provided by the financial institutions (Jenkins, 2008).

c) Distribution Channels (Agents)

The preliminary contact with the customers are the distribution channels through the agents. Retailers such as MNOs own retail centers or a small shop in the village that are in charge of customer registration and allow cash-in and out services in favor of the MNOs are non-bank entities (Jenkins, 2008; Tobbin 2011). The mobile money services is upgraded based on the knowledge and understanding of the customers given by the agents. Consistently, the airtime retailers were supposed to be used as the main agents of the mobile money service. However, in majority of existing operations, the agents have upgraded to general retailers mostly in idyllic areas. The agents become subsidiaries to the MNOs. The amount of money involved is very fundamental in agent selection. The bank mostly have enough reimbursements from other ventures to provide customers’ urgency to withdraw cash. The mobile money services rendered by agents earn them commissions. Even though the commission are very small per transaction, it is conventional that the accumulation of these small amount will yield a larger amount when more
transactions are conducted. Current retailers who are agents are relieved of the burden of carrying larger sums of money to the bank (Jenkins, 2008).

d) Merchants and Utilities
To embrace and apply the mobile money services, merchants and utility providers offer ancillary reason. Service providers who accept the mobile money payment system for their services qualify as merchants and this include supermarkets and internet shops. For example, both M-PESA in Kenya and ZAP, Slydpay and Etransact in Ghana are used for the payment of digital and satellite television services (DSTV) and other utilities like electricity and water. E-value is purchased by the merchants’ customers and paid by transferring the e-value to the merchants’ accounts. The e-value of the mobile money service allows payment of utility bills hence avoiding all the long queues associated with it. This produces convenience, speed and security to the customers and merchants. The mobile money ecosystem increases its clientele by the vacancies of the utility providers and merchants thereby boosting the service. The revenue involved in payment collection and processing will decrease with the application of mobile money. Payment schedules will be faster and customer convenience will be excellent with this system. The clientele base of the merchant can rise exponentially due to these leverages (Jenkins, 2008).

e) Regulators
For the efficient continuity of the mobile money ecosystem, regulators are very mandatory. Regulators conceivably transfer knowledge and perspective of the different managements ramified in this system. Regulators work to impose regulations to implement an equilibrium between novelty, financial worth creation, effectiveness, caution and monetary admittance to accomplish
their purpose as regulators. Conformity to the varied regulations can be enforced by the regulators. However, regulators can be arbitrators between competitors. Their involvements cater for all the other correspondents of the mobile money ecosystem (Tobbin 2011).

f) The Customers

The end users of the mobile money services are the customers and these customers bring to the table varied demands which serve as opportunities to the mobile money ecosystem. For the mobile money service to excel or thrive depends on the customers’ behavior towards the service (Tobbin, 2011). Therefore, the customers’ satisfaction is very paramount to the mobile money service and also it is key that the needs of the customers are met to provide good experiences towards the service. However, this task cannot be easily attained due to some restraints such as the absence of monetary proficiency and the acceptance of a new technology by the society (Jenkins, 2008).

2.5 Mobile Money Transfer Process

Mobile money comprises a series of interrelated systems that make up the mobile money network. Mobile money is normally a customer-based mechanism where the customer’s application is embedded on a SIM card. A SIM card is a chip that is responsible for identifying a customer’s phone number; it also links customers to a Mobile Network Operator’s m-commerce server. When a transaction is initiated, the application links to the operators’ network and utilizes the SMS platform to communicate with mobile commerce server.

Mobile money transfer process normally comprises four major stages: registration, cash in, transfer and cash out”. A registration process is needed just once to enable a client utilise mobile money
services, this is free of charge. Registration is done by visiting an agent and completing a form. The agent then authenticates the customer’s ID then uses a phone to register the customer momentarily on the MNO’s mobile commerce platform. An account with a mobile wallet is then opened on the mobile commerce platform. An SMS notification is sent to the client. The client selects a secret PIN and this becomes the major verification token for all future mobile money transactions. The mobile money application form together with the evidence of verification is sent to the mobile network operator. Cash in transactions involve the buying of electronic money into the mobile wallet. The client goes to an agent and pays money which is deposited into the mobile money wallet. The mobile money merchant transfers the electronic money from his/her SIM to the client’s SIM through the mobile money platform. An encrypted SMS is transferred to the client to validate the transaction. The final stage is the actual transfer which is done via the client interface on a basic model phone.

To choose the best mode for the mobile money transaction which gives flexibility between “usability, security and costs, most implementations use a menu driven access by the SIM toolkit, which is the standard software on all mobile phones” (Hughes & Lonie, 2007). The client utilizing the menu transfers the electronic money from a registered SIM to the receiver’s mobile wallet. This process entails an encrypted SMS to the mobile commerce platform from the sender instructing the delivery of an amount to a receiver. After authentication and availability of funds are proven, the mobile money server sanctions the transaction by deducting the amount from the senders account and crediting the receivers account. This is followed by a confirmation through an encrypted SMS to both parties. Most mobile money applications currently use a SIM tool kit or USIM as the technological platform. There are other applications like the (Unstructured
Supplementary Service Data), this technology is used by Vodacom in Tanzania (Camnar & Sjöblom, 2009). Encrypted texts are transferred to the recipients and to notify them of the transaction and their new balances are confirmed in the mobile wallet. The final phase of the process necessitates the need for the recipient to visit the mobile money agent to cash out the electronic money. Receivers are at liberty to use their money to make payments or store it in their mobile wallets for future usage.

2.6 Banking in Ghana

According to Ankrah (2014) the banking sector in Ghana comprises mainly of commercial banks, savings and loans associations and rural and community banks. The Central Bank supervises every financial institution in the country. In order to engender consistent development of the banking sector, the Central bank ensures that, banks are meeting the needs of the citizenry. The banking sector constitutes the largest component of the financial system. The banking sector has witnessed numerous strategic reforms following the implementation of a number of changes in the sector.

The study utilized two banks; GCB Bank Limited and Fidelity Bank Plc. GCB bank limited commenced business in 1953 as Bank of the Gold Coast altered its name later to Ghana Commercial Bank Limited. Ankrah (2014) stated further that, the major aim of setting up the bank was to offer banking services to the nation for socio economic development. The Bank was rebranded GCB Ltd 2 years ago with a change to its philosophy and approach to banking. The bank currently has over 250 branches in all regional and district capitals of Ghana. GCB limited recently acquired the assets of UT bank and Capital Bank after its failure to meet the banking requirements of the Bank of Ghana.
Fidelity Bank Plc was given its universal banking license on June 28th 2006, “it was the 22\textsuperscript{nd} bank to be given license by the Central Bank of Ghana following the enactment of the new Banking Act, 2004” (Act 673). Fidelity bank has branches in all 10-regional capital in Ghana. Its main purpose of operation is to provide financial support to individuals and small to medium enterprises.

2.6.1 \textbf{Technology and Banking}

The emergence of Information technology (IT) has given the banking sector the urge to handle the problems posed by the new economy. Information technology has been the foundation of contemporary financial sector transformations geared towards maximising the rapidness and dependability of financial services and of initiatives to fortify the banking sector. Advancement in technology is changing major functions of financial institutions, and banks are providing basic functions through technological innovations. Many of the banking transactions may be carried out comfortably from home and clients do not necessarily have to physically visit banks for anything. Technology has moved from being an enabler to a business driver. The advancement of the internet, mobile and communication technologies has added diverse dimensions to banking. The current information technology is harnessed in acquiring customers, speeding automation and enhancing the efficiency of processes, offering ease and efficiency to customers (Ankrah, 2014).

It has become imperative for financial institutions especially banks to adopt to the new technological advancement to ensure its existence. This view was shared by Stephen Bird (2006) “the current situation in the banking industry as a (stage of extinction), where banks either swiftly adapt and create new competitive positioning or gradually perish”. This justifies the fact that, the
banking industry is likely to witness a total transformation in digital technology. Accenture PLC (2014) is of the opinion that, future banks should be “everyday banks.” In order to gain success in the banking environment, banks ought to be indispensable daily banks poised to honour their clients’ monetary and non-monetary needs. “An everyday bank” provides a total client solution, thus, encouraging consistent interactions. With the use of digital levers, such banks create all the business models, creating access to novel, customers, and profit pools.

Ankrah (2014) explains that, “the advent of technology has enabled the provision of banking products and services through electronic delivery channels known as electronic banking E-banking”. E-banking services have become a more convenient means of meeting the needs of the dynamic nature of the Ghanaian consumer. The banks under study have adopted this approach by setting up E-Banking Departments to handle all electronic banking services to the customer. The basic tenants of E-banking products include but not limited to: ATMs, Web banking. Mobile banking, Point of sales terminals for payments, and lately mobile money services. According to the Bank of Ghana Annual Report (2016), all 33 commercial banks in Ghana have embraced E-banking services, and 15 of these banks are actively participating in mobile money services in partnerships with the Telecommunication companies.

In addition to the immense benefits of E-banking to consumers, many scholars are of the view that, the banks are the main beneficiaries of these new technologies. In emerging markets, electronic banking provides many cell phone users who would have otherwise be left out of the financial mainstream a solution to their banking needs. E-banking makes fundamental financial services more reachable by reducing time and distance (CGAP, 2006). It further reduces the bank’s
expenditure and cost of operations. Mobile banking offers a chance for financial institutions to broaden banking services to new clients which maximizes customer base (Lee, Lee and Kim, 2007).

2.6.2 Banking Electronic Products and Services

Electronic products and services are the products and services backed by technology (Ankrah, 2014). These include but not limited to website, internet banking (i-banking), mobile banking (m-banking), mobile money, automated teller machines (ATM), telephone banking (telebanking), Personal Computer Banking (PC Banking), branch networking and electronic funds transfer at point of sale (EFTPoS).

- **Website**

A website, “(alternatively, Web site or web site) is a collection of Web pages, images, video and other digital assets that is hosted on one or several Web server(s), usually accessible via the internet, cell phone or a LAN” (Sfetcu, 2014). All open sites are viewed collectively as constituting the World Wide Web. Web pages are generally accessed from a common root Uniform Resource Locator (URL) entitled the homepage, and typically reside on the same physical server. Not all sites are open access, some sites may require a subscription fee to permit viewing.

- **Internet Banking**

The aim of internet banking is to provide customers access to their accounts via a website and to permit them to perform some transactions on their account, given compliance with stringent security checks. It could also be express as banking through the World Wide Web. Simply put,
internet banking is described as “the provision of traditional services over the internet” (Internet Banking handbook, 2001). According to Talmor (1997), the reason of banking on the World Wide Web is first to “provide banks with a delivery channel for selling banking services to their customers” and secondly, “helping the development of the electronic commerce infrastructure”. Internet banking by its nature provides more convenience and flexibility to customer coupled with a virtually absolute control over their banking.

- **Mobile Banking (M-banking)**

In one academic model, Tiwari and Buse (2007) defined mobile banking as the provision of banking and financial services with the help of mobile telecommunication devices. The scope of offered services may include facilities to conduct bank and stock market transactions, to administer accounts and to access customized information. Mobile banking can be considered also virtual banking, alongside telephone where branch financial services are delivered via mobile phone where the bank customers can perform retail-banking transactions. Mobile banking can be in the form of SMS-banking or WAP-banking, however, SMS-banking is accessed by sending text messages whereas WAP-banking is a form of mobile internet service accessed via GPRS (internet) connection (Ankrah, 2012).

- **Automated Teller Machines (ATMs)**

An automated teller machine (ATM) is a “computerized telecommunications equipment that offers customers of a financial institution the ability to perform financial transaction in a public space without the need for a human interaction” (Adepoju & Alhassan, 1970). According to Rose (1999), an ATM combines a computer terminal, record-keeping system and cash vault in one unit,
permitting customers to enter the bank’s book keeping system with a plastic card containing a Personal Identification Number (PIN) or by punching a special code number into the computer terminal linked to the bank’s computerized records 24 hours a day.

- **Telephone / Mobile Banking**

Telebanking (telephone banking) “can be considered as a form of remote or virtual banking, which is essentially the delivery of branch financial services via telecommunication devices where the bank customers can perform retail banking transactions by dialing a touch-tone telephone or mobile communication unit, which is connected to an automated system of the bank by utilising Automated Voice Response (AVR) technology” (Balachandher, Santha, Norazlin, & Prasad, 2001).

- **Personal Computer Banking**

PC- Banking is “a service which allows the bank’s customers to access information about their accounts via a proprietary network, usually with the help of proprietary software installed on their personal computer” (Abor, 2004). It is used to perform a variety of retail banking tasks and offers the customer 24-hours services. PC-banking has the advantage of reducing cost, increasing speed and improved flexibility of business transactions (Balachandher et al, 2001).

- **Internet banking**

The idea of internet banking according to Essinger (1999) is: “to give customers access to their bank accounts via a web site and to enable them to enact certain transactions on their account,
given compliance with stringent security checks”. Internet banking is described as the provision of traditional (banking) services over the internet.

2.7  Empirical Review of Effects of Electronic Banking

According to Mutua, (2010) quite a number of authors have researched on the effect of electronic banking and the performance of commercial banks. In Tchouassi’s (2012) study, the authors based on empirical insights pursued to discover whether in some designated countries within the Sub Saharan Africa, mobile devices were capable of rendering banking services to the unbanked. Furthermore, Mutua (2010) stated that, the authors also desired to determine how banking services could reach the deprived and underprivileged through the use of mobile phones. Also, it was evident from the findings of the study that, usually among underprivileged and poor households in Sub-Saharan Africa (SSA). The findings revealed that deprived, helpless and low-income homes in SSA countries often needed to have bank accounts and that they were confronted with high costs for undertaking simple financial proceedings. The mobile phone thus was an alternative mode of delivering financial services to the unbanked. To make this happen, technological as well as economic innovation, policy and supervisory innovation was required.

A study from the view of an empirical analysis on the issues influencing the implementation of electronic banking in Malaysia was conducted by Ching et al (2011). The focus of the study was to use the TAM model to examine mobile banking recognition in Malaysia. Precisely, the purpose of the research was to assess the relationships amid constructs of TAM model and mobile banking adoption behavioural intention. The study’s findings discovered that the factors influencing the mobile banking services were perceived usefulness, perceived ease of use, relative advantages,
perceived risks and personal innovativeness. However, the only factor that failed to impact mobile user’s intention was social norms.

In a paper on mobile banking (part of the E-banking suite) and economic development by Donner and Tellez (2008), they pursued to form a connection between adoption, impact, and use. In their (Donner and Tellez, 2008) study, it was confirmed that a key transformation in the developing world could be by presenting a more cost-efficient way of transporting money and also by presenting users with the opportunity to have an encounter with formal financial systems and m-banking. However, the real extent of that prominence required numerous studies employing multiple approaches and multiple theoretical standpoints before responding to the questions about adoption and impact.

Tiwari, Buse and Herstatt (2006) research mobile banking as business strategy sought to examine the opportunities for banks to create revenues by providing value added, groundbreaking mobile financial services while maintaining and even expanding their base of technotard customers. The findings show that mobile banking can be relied on as a key strategic for service differentiation in the banking sector. Since it results in provision of fast reliably service that results in customer satisfaction and retention. In a similar vein, Wambari (2009) from the perspective of a developing country studied mobile banking using Kenya as a case study. The author pursued to examine the significance of mobile banking in the day to day operations of small enterprises and to comprehend the impediments entailed in using m-banking as a business instrument and to appreciate the merits and demerits within. This study illustrated that the acceptance of mobile phones results from a social process, rooted in social practices like small enterprises operations which brings about
economic advantage. In relation to Koivu (2002) the adoption of mobile phone in Kenya has been unparalleled. Mobile banking not only impacts organizational productivity in Kenya, it also impacts decision making and the activities of the economy as a whole. The employment of the mobile devices in undertaking monetary transaction is gradually getting attention. Mobile banking is one invention which has increasingly offered itself in prevalent ways of being recognized in several areas in the industry.

Drawing on Kolodinsky, Hogarth and Hilgert (2004) quite number e-banking software not limited to mobile banking are presently being used by most people in America. Nonetheless, several others do not use this software. Among factors that influence the acceptance of the intention to adopt as well as the adaptions among these factors as time goes on were examined. The findings revealed that, risk tolerance, observability, compatibility, relative advantage, product involvement and complexity/simplicity impact adoption. Even though adoption was unstable as time went on, the impact on other factors remained the same.

A study conducted in New Zealand based on the outcome from a logistic regression showed that Consumers decision to adopt both electronic and non-electronic banking methods depends on factors like perceived risks, service quality, user input factors and education (Gan, Clemes, Limsogunchai & Weng, 2006). As proposed by Comninos et al. (2008) also proposed that the only way to consumers will agree to only transact do business electronically is when they find it safe and appropriate. In addition, those people who adopt mobile banking in India find it worrisome when they are unable to differentiate between codes for different transaction and when they are not able to handle basic software concerns like updates and installation; safety issues such as
account misuse, financial and ease of use of software are also of major concern (Sharma & Singh 2009).

2.8 Conclusion

From the review of past studies, it is evident that there is a rise in literature examining mobile money service adoption and its effects on financial inclusion. It is obvious that studies within and outside African provide more in-depth insights on the innovation and transformation of mobile money services on financial institutions. It is also very clear that very little has been done in the area of assessing the adoption of mobile money service usage by the banked population and its attendant impact on commercial banking particularly in Ghana and Africa as a whole. It is evident that mobile money services are gradually taking over financial transactions through cash in and cash out, as well and payment options for goods and services.

The most apparent reason for this high adoption could be attributed to the perceived usefulness and perceived ease of use of the mobile money services. The uniqueness of this study is derived from the fact that besides determining mobile money service adoption among customers of two selected banks in Ghana. The study seeks to add on to the scanty literature on the assessment of mobile money service adoption of commercial banks in Ghana. Even though much has been written on the general adoption of mobile money services by the unbanked population, very little has been done on the assessment of the adoption of mobile money services in Ghana, a case of the banking sector. This research is an attempt to fill this gap.
CHAPTER THREE
RESEARCH METHODOLOGY

3.1 Introduction

This chapter of the thesis outlines the methods and techniques used in carrying out the research. This will enable researcher to address the research questions to realise the objectives of this thesis.

According to Ankrah (2014) research methodology refers to the method adopted in carrying out a research while Kothari (2004), mentions that, it is an organised way applied to solve a research problem. A method, according to Leedy (1993) is a way of accomplishing an end result.

There are many philosophies and theories from scholars establishing the real meaning and purpose of a methodology. These include philosophical perspectives and epistemology perspective. All of these ideas and perspectives even though share their thoughts on different beliefs, agree that, research methodology in social science provides a scientific basis for establishing the conclusion of a research. Aina (2004) posits that, a research is significant in any area of study and vita to the growth of any profession. Aina and Ajiferuke (2002) contend that the “survey research is carried out through a systematic and comprehensive collection of information about the opinions, attitudes, feelings, beliefs and behaviours of people” (as cited in Agboola, Samuel, Bolanle & Austin, 2013, p. 6). Likewise, Kumekpor (2002), indicated that when the term ‘survey’ is “applied to social phenomena, it implies a careful scrutiny or investigation of a demarcated geographical area in order to have a comprehensive view of the nature, conditions and composition of the social groups, institutions or premises within such a defined area” (as cited in Ankrah, 2013, p. 10).
The methodology for this study covers the research methods, research design, population and sample size, sampling techniques, instrumentation, mode of collection and data analysis in more details. Any study can be characterized as an all-around sorted out examination conveyed with a specific end goal to acquire data for taking care of issues (Cooper & Schindler, 2006). Cooper and Schindler (2006) clarifies that research is a methodical examination and its point is to give data to take care of issues. Karami, Rowley and Analoui (2006), also states that, research methodologies are thought to be frameworks of clear guidelines delivered, whereupon research is established, and against which claims for information are evaluated. Accordingly, it could be contended that when conducting any sort of research there must be rules and regulations guiding it and also taking into account logical standards.

3.2 Research Design

For any research to be correctly performed, there is the need for the researcher to outline a plan detailing how study is going to be carried out (Ankrah, 2014). Literature usually referred to as a research design. Thus, once the research problem has been clearly defined, a design is laid out in order to provide a step by step procedure in addressing the study objectives. Typically, the nature of the problem defines the type of research plan that would be employed.

Ankrah (2014) argues that, a research design should be seen as the general plan for obtaining data in order to answer research questions. This naturally includes the specific methods the researcher intends to employ in selecting participants and data analysing techniques. Accordingly, Rowley (2002) indicated that, “design preferences for research is based on the aims and purpose of the research prepositions, the degree of knowledge and research viewpoint”. While Saunders et al.
(2007) state that “research design offers the constructs for collecting and assessing data needed for research”. Also, Remenyi (2002) stated “that management researchers tend to struggle when trying to choose a suitable technique and strategy”. Several strategies can be adopted in a social science research such as case study, experiments, surveys, histories, and analysis of archival information.

This study adopted the survey methodology approach. This methodology allowed the results of the study to be generalized from the sample perspective. Due to the large size of the population, the survey method was employed to aid the collection of quantitative data for analysis and the results obtained also gives high level of reliability. It also does not require a huge financial outlay and it allows collection of data within a short period of time which facilitate the generalisation from a sample the entire population. In the context of this study, participants were customers of two banks (GCB and Fidelity Bank) in Ghana. The study used employed cross-sectional studies due to the nature of the data collection. Thus, respondents were approach at the banking halls. This method employs different groups of people of who differ in the variable of interest, but share other characteristics such as socioeconomic status, educational background among others (cherry, 2015). According to Robson, (2002) survey strategy usually suit cross-sectional studies. The cross-sectional survey again allows the researcher to look at different things at once (age, income, gender) and often appropriate when assessing the prevalence of something in a given population at a particular point in time.

Burns and Bush (2007) also state that a research design is “a set of advance decisions that makes up the master plan specifying the methods and procedures for collecting and analysing the needed information”. There are basically three main approaches in research, qualitative, quantitative then
mixed method. The quantitative research depends on the use of statistics and numbers and present these findings in figures. The qualitative, however, describes an event or phenomena with the use of words. The mixed method approach combines both the quantitative and the qualitative techniques. This study adopted the quantitative approach. This method enables the research to quantify the problem and understand how it can be projected into the larger population.

There are several research philosophies and paradigms to use for research purposes. According to Levin (1988), a research philosophy is the researcher(s)' perspective about the methods and techniques a phenomenon should be collected and analysed. To “interpret and understand the world we are living, we certainly need ‘ways of viewing’ and ‘ways of interpreting’ to grasp the surrounding facts, ideas, and events” (Levin, 1988). The social world, therefore, can be interpreted and understood via many schools of thought. In whatever appearance, “for a theoretical model to explain anything there must be an appropriate relationship between the statements made, the methods used to make such statements, and the philosophical perspective deployed to inform the methods” (Abbott, 1998). This study adopted the realism paradigm to understand the beliefs, opinions, and perspectives of the participants to be sought.

Realism is defined by Saunders et al. (2007) to be “the epistemological position, in which objects exist independently of our knowledge of their existence”. Also, Bryman and Bell (2007) argued that the realism philosophy paves a way for a chance to understand the beliefs and thoughts of individuals, to be assessed from a wider context. Therefore, the application of the realism paradigm brings an easy way of authenticating and replicating the data. The realism paradigm is consequently well suited for this study, as it guarantees the consideration of customers based on their evaluation of the factors they consider when using mobile money in Ghana, adopting a
relevant theory as a foundation for the prediction of phenomena, including carrying out an assessment to augment an understanding from the subject’s viewpoint (Cooper & Schindler 2008).

3.3 Selection of Case (Setting)

The study setting were GCB Limited (High Street Branch) and Fidelity Bank (Ridge Branch). The main purpose of selecting these banks are with respect to their ownership, which is Ghanaian locally owned and their ranking among the top ten (10) banks in Ghana by the Ghana Institute of Bankers in 2015 (BoG Annual Report, 2016). Furthermore, both GCB bank and Fidelity have a high customer base on the mobile money platform, representing a total of 65% of the market share, and their transactional value exceed 85% contribution to the total mobile money float. GCB bank is the most profitable bank by value and market share.

Whilst Fidelity Bank Ghana Limited is amongst the five (5) top banks in Ghana based on the financial key performance in the industry. According to the Bank of Ghana, GCB leads the banking sector in Ghana with 52% market share whilst at the same time it possesses the highest number of branches (BoG Annual Report, 2016). Fidelity Bank is one of the relatively newest banks in Ghana (last 10 years), with a deep adoption of automation of its products and services according to the Bank of Ghana Annual Report 2016. After a thorough review of literature and the annual reports of these banks, the researcher had a conviction to carry out this work with these banks. However, the researcher also foresaw the possibility of difficulties in getting information from the banks, as preliminary work done suggest that the information to be requested by the researcher may be classified as confidential.
3.4 Selection of Subjects

The selection of the subject covers the population of the study, sample size, sample technique and mode of data collection.

3.4.1 Population of the Study

Busha and Harter (1980) defines population as “any set of persons or objects that possess at least one common characteristics”. In the view of Kumakpor (2002), “population is considered as the total units of all units of a phenomenon to be investigated that exist in the area of investigation”.

The target population for this study was customers of the selected banks branches of GCB and Fidelity Ghana Limited in the Greater Accra Region. Also, Creswell (2013) a populace is the entire quantity of individuals in any well-defined group of interest. Kumar and Phrommathed (2005) also defines population as the target group of individuals within which the research seeks to acquire knowledge from.

Tavakoli (2013) expressed that there is a qualification between the real populace and an available populace. Tavakoli (2013) continues to state that, the accessible populace is the populace that is really secured by the examination and the genuine populace is the populace from which the outcomes are required. In any case it is the genuine populace that the scientist will sum up its discoveries. The choice of the population was also because of the researcher’s proximity to the designated sample as compared to conducting the study outside geographical area (Greater Accra). Additionally, the involvement of bank customers was due to the fact that, bank customers are also stakeholders and literature has revealed that, the success and adoption of any banks products and services will be flawed without the direct involvement of the customers. The target population was
therefore all users of mobile money services in these financial units. This enabled the researcher to have a fair presentation of respondents so to generalise findings of the study.

Table 3.1: Customers of the selected Banks using Mobile Money Services

<table>
<thead>
<tr>
<th>BANK</th>
<th>Number of Customers using Mobile money services</th>
</tr>
</thead>
<tbody>
<tr>
<td>GCB</td>
<td>350</td>
</tr>
<tr>
<td>FIDELITY BANK</td>
<td>610</td>
</tr>
<tr>
<td>Total</td>
<td>960</td>
</tr>
</tbody>
</table>

Source: Field Data 2017

The above table gives a summary of the population of bank customers from the respective banks branch used for the study on mobile money services.

3.4.2 Sample Size

Sampling is the selection of some units from a study’s population of interest and it is a technique that allows a researcher to make inference about a population based on the nature of the sample (Aina, 2002). Consequently, Saunders et al. (2009) recommended that “a sampling process is required to aid in organizing the study to a controllable size”.

The sample size for this study was therefore based on Alreck and Settle (1985) proposition on sampling ratios for different population sizes: in their view, "sampling ratio of 30% is adequate for a population of less than 1,000; sampling ratio of 20% is adequate for a population between 1,000 and 10,000; and a sampling ratio of 10% is adequate for a population greater than 10,000".

Based on this authority, 30% of 960 representing a total number of banks customers using mobile money services was the sample for the study. The decision to take a sample for the study instead of surveying the total population was informed by the fact that, a saturation survey would have
been difficult considering the size of the customers, limited time as well as other limited resources which will not allow for a complete survey. Sampling has the advantage of saving time, financial and human resources. Also, the findings would be reasonably accurate (Ankrah, 2014).

According to Alreck and Settle (1985), “only a small fraction of the entire population ordinarily provides sufficient representation of the group as a whole and enough accuracy to base decisions on the results with confidence”. The total bank customers is nine hundred and sixty (960). 30% sampling ratio is adequate for a target population less than 1000 as suggested by Alreck and Settle. A proportionate sample was determined and used for the study. Using Babbie (2010) formulae to calculate the proportionate sample:

\[
P. S = \frac{\text{Customer Population of each Bank}}{\text{Total Population of Bank Customers}} \times 960
\]

Where P. S = Proportionate Sample Size. The result is shown in Table 4 below

<table>
<thead>
<tr>
<th>BANK</th>
<th>Bank Customers - Population</th>
<th>Proportionate Sample</th>
</tr>
</thead>
<tbody>
<tr>
<td>GCB</td>
<td>350</td>
<td>105</td>
</tr>
<tr>
<td>FIDELITY BANK</td>
<td>610</td>
<td>183</td>
</tr>
<tr>
<td>Total</td>
<td>960</td>
<td>288</td>
</tr>
</tbody>
</table>

Table 3.2: Sample Size for Bank Customers

Table 3.2 shows the proportionate sample size of the bank customers from the respective banks. The sample was considered appropriate following Hair et al. (2006) suggestion of sample sizes of 100 for quantitative studies.
3.4.3 Sampling Techniques

Corbetta (2003) described sampling as “observing a part in order to gather information about the whole is an almost instinctive human act”. According to Anderson, (2004), “it is a deliberate selection of a number of units to denote a bigger population”. Ankrah (2014), agreed with other scholars that, “sampling is the selection of a fraction of the total number of units of interest to decision makers for the ultimate purpose of being able to draw general conclusions about the entire body of units”.

According to Bryman and Bell (2007), there are two part of sampling. These are probability and non-probability sampling. This study however adopted the non-probability sampling technique. Non-probability sampling procedure is dependent on the individual judgement of the researcher and it includes purposive sampling, convenience sampling and quota sampling (Collis & Hussey, 2009). The study used convenience sampling to allow for population members who are conveniently available to participate. This sampling method ensures simplicity of sampling and ease of research, facilitates data collection in a short duration of time and cheapest to implement as an alternative sampling method. It was used to sample customers of the selected banks currently engaged in mobile money services based on their convenience and availability. This was done by approaching the customers and enquiring about their availability to participate in the study. Those who acquiesced were then surveyed.

3.5 Instrumentation

Research instruments are tools developed by researchers to aid in data collection. This study used the questionnaire instrument as the main source of primary data. This is to allow a better facilitation
of data gathering, easy means of testing data for reliability and validity, save time during the research process, and preserve the anonymity and confidentiality of the respondent’s reactions and answers.

3.5.1 Questionnaire

According to Kumar (1999) questionnaire are a list of questions with which a respondent is expected to read, give an interpretation of what is expected and then select the opinion that best suits the question. The questions for the questionnaire were adapted from previous studies to ensure the validity and reliability of the items. Validated items were utilized in order to ensure high quality of this empirical research. The standardized questionnaire allows easy comparison of different answers from respondents in the analysis of data for the study (Saunders et al., 2007; Neuman, 2007; Patton, 2002; Amoh, 2016).

The questionnaire is also an effective tool for the researcher to gather opinions, attitudes, measure cause and effect relationship (Malholtra, 2007). Questionnaires are easy to administer, have undoubted reliability due to its limited stated alternatives (Malhotra, 2007). Although, there were several means (personal interviews, telephone interviews, observation and the self-administered questionnaire) through which the researcher could obtain information from the respondents, the research used the self-administered method. A questionnaire was given to the target sample to read and tick the option that best explains the answer. The study adopted both open and closed ended questions to allow the respondents share their opinions directly on some of the questions.

The questionnaire was designed in sections along the main lines of the objectives of the study and are;
**Section 1: Demographics** This handled the general questions about the demography of the banks customers. The answers to these questions were used to establish the characteristics of the respondents.

**Section 2: Mobile Money Service Adoption** This section explored the various reasons for mobile money adoption by customers of the banks, and its associated uses. The reasons for the adoption and it’s inter relationships were also assessed.

**Section 3: Mobile Money Ease and Usefulness** The ease and usefulness of the money service is proving to be a catalyst for its adoption. This section was focused on finding out among others the ease and usefulness of the service among different categories of the respondents.

**Section 4: Perceived Trust of Mobile Money Service** This section sought to establish the various reasons for the use and perceived trust that the respondents are likely to have for the service. It also explored the security implications

**Section 5: Challenges with Mobile Money Services** This section dealt with the challenges that are associated with the ease, usefulness and perceived trust of the mobile money service. It attempted to solicit these views from the respondents

**Section 6: Recommendations** This section allowed the respondents to inform the study with recommendations that will be contribute to knowledge and scholarship.
The questionnaire was presented in the form of statement on a 1 to 5 Likert scale for respondents to score statements, from 1 — “strongly agree” to 5 — “strongly disagree”. The measure adapting from previous validated by other scholars in mobile money and ecommerce environments.

3.5.2 Pre-testing

Kumar (2005), postulated that, once the research design is completed, it is prudent to try out the chosen technique as the main data collection device. In the view of Aina (2002), a pretest is a “dress rehearsal” that helps to clarify certain problems inherent with the collection instrument.

For the purpose of this study, a pilot study was conducted using customers from Ecobank Ghana Limited. The justification is based on proximity of the researcher to these institutions, similar structures and functions. Forty-five (45) copies of the questionnaire were sent out to the bank to be responded to. The results of the pilot or pretest was used to improve and standardize the study. It helped to eliminate duplications and doubts. For instance, questions on challenges and recommendations related to the mobile money service were reviewed after the pre-testing, from close to open ended questions, to remove restrictions to appropriate data gathering. Other changes made were the need to review the questions for conciseness, and modification of the demographic section to exclude the income levels of the participants, and reduction of the number of banks to only those being used for the study.
3.6 Mode of Data Collection

This consists of questionnaire administration and collection as well as method of data analysis and presentation of results. Data collection method is key for a researcher to gather all the significant data and important information keeping in mind the end goal to accomplish the objectives of the study. As indicated by Saunders et al. (2009) there are two information accumulation strategies known as primary and secondary data source. As indicated by Collins and Hussey (2003), primary data the authentic data that is gathered from the principle source by the analyst. These include observations, questionnaires, survey and individual meetings (Hussey & Hussey 1997). This study utilized primary data. The primary data was used to gather the necessary information from respondents through the use of questionnaires.

Structured questionnaire were administered at the bank through the personal banker to customers. Assistance was sought from the customers during their interactions with the personal banker. Where the customers obliged, there were then taken through the questions and asked to fill in their responses by the assistants. The completed questionnaire were collected right after they have been completed. Some other customers requested to take their questionnaire and return at a later date. Respondents were given reasonable period during the banking hours to complete the questionnaire and return to the personal banker.

3.7 Presentation of Data and Analysis

According to Porter, (2008), presentation of data and analysis is an essential part of a research. For this study, data were coded and screened for outliers or any other variation in the data set. Quantitative data was collected and analysis. Statistical Package for Social Sciences (SPSS) was
used for data capturing and analysis due to its ease of use. The “SPSS is the most widely used statistical software in the social sciences” (Healey, 1993). Descriptive analysis was used for demographic variables, whilst cross case analysis was used for the other questions to present the findings in the two-bank situation. Simple frequencies, percentages, charts, cross tabulations, and correlations, to ascertain the significance of the relationship between variables was used to present the results of the study.

The data analysis is in six parts. The first part analyzes demographics. The second part analyzes data on the adoption of mobile money services by the customers of the bank, whilst the third part analyzes data on the ease and usefulness of the mobile money services among the banks customers. The fourth part of the data analyses deals with the perceived trust and integrity of mobile money services; the fifth and final part of the data analysis were on the challenges with mobile money services and recommendations from the respondents on the future of mobile financial services in Ghana.

3.8 Ethical Consideration

Ethical consideration was not overlooked; undertaking a research entails honesty and integrity. Ethics is a branch of philosophy that deals with morality as stated by Polit and Beck (2004). Authorisation to conduct the research was obtained from each of the respondent and any information collected was considered as sensitive and thus treated with high level of confidentiality. Burns and Grove (2000) and (Burns & Grove, 2003) outlines the Right to self-determination. Right to confidentiality, the right to privacy and Anonymity has some ethical principles that needs to be observed. These ethical principles were all were observed during the study.
CHAPTER FOUR
ANALYSES AND PRESENTATION OF FINDINGS

4.1 Introduction

Data analysis is the process of inspecting, cleansing, transferring and modeling data with the objective of unearthing useful information, informing, conclusion and supporting decision making (Saunders et. al., 2008). The collected data from the survey is presented and analyzed in this chapter. Analysis was done using the SPSS 2.0 and Microsoft excel. A number of variables were cross tabulated to link relationships.

The analysis and presentation of the findings were done in relation to the objectives of the study. These are reasons for adopting mobile money services, evaluating the ease and usefulness of mobile money services, examine the perceived trust of mobile money services, identify the challenges associated with mobile money services, and recommendations for improved and integration of mobile money services into the banking industry.

The outline of this chapter are as follows

1. Presentation of quantitative data.
2. Descriptive analysis of collected data.
3. Reliability and validity checks for the measurement model.
4. Empirical aspects of the study.
5. Interpretation of data based on the literature review
4.2 Analysis and Presentation of Findings

The findings from the questionnaire administered to the customers of GCB Bank Ghana Limited and Fidelity Bank Ghana Limited are presented in this section. This questionnaire focused on the demographics of the respondents, the reasons for adopting mobile money services, the ease and usefulness of mobile money services, the trusts and risks associated with the use of the service, challenges associated with the use of mobile money services and opinions from respondents on the benefits of the service as well as recommendations of how to further drive mobile money adoption. The total sample was 288 customers. Out of the 288 respondents targeted with the questionnaire, 188 responded representing 65.1% of the sample chosen responded.

4.2.1 Demographics

Demographic characteristics comprising, gender, age, level of education, years of being a bank customer, types of services mostly used are summarized in Table 4.1.

Table 4.1- Demography of Respondents (Gender, Age and Educational Level)

<table>
<thead>
<tr>
<th>Variable</th>
<th>Count</th>
<th>Column N %</th>
</tr>
</thead>
<tbody>
<tr>
<td>GENDER OF RESPONDENTS</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>91</td>
<td>48%</td>
</tr>
<tr>
<td>Female</td>
<td>97</td>
<td>52%</td>
</tr>
<tr>
<td>Total</td>
<td>188</td>
<td>100%</td>
</tr>
<tr>
<td>AGE OF RESPONDENTS</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Less Than 18</td>
<td>3</td>
<td>2%</td>
</tr>
<tr>
<td>18-25</td>
<td>8</td>
<td>4%</td>
</tr>
<tr>
<td>26-30</td>
<td>26</td>
<td>14%</td>
</tr>
<tr>
<td>31-40</td>
<td>93</td>
<td>49%</td>
</tr>
<tr>
<td>41-50</td>
<td>53</td>
<td>28%</td>
</tr>
<tr>
<td>More than 51</td>
<td>5</td>
<td>3%</td>
</tr>
<tr>
<td>Total</td>
<td>188</td>
<td>100%</td>
</tr>
<tr>
<td>EDUCATIONAL LEVEL OF RESPONDENTS</td>
<td></td>
<td></td>
</tr>
<tr>
<td>No Education</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>Primary</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>JHS</td>
<td>1</td>
<td>1%</td>
</tr>
<tr>
<td>High School/SHS</td>
<td>0</td>
<td>0%</td>
</tr>
</tbody>
</table>
The findings from table 4.0, shows that out of the 188 respondents who participated in this study 48% were male while 52% were female. Most of the respondents were between 31-40 years, and the least participants who were more than 51 years were 3% of the total respondent. This implies that majority of them were in the economically active population. Mobile money service users are scattered within the working class of the sampled population representing a total of 78% representing ages between 31-50 years.

Furthermore, table 4.0 shows that 1% of the respondents were Junior High School graduates while 7% had diplomas and certificate from Vocational/Technical institutions. Majority (116) 62% of the respondent were tertiary school graduates who holds bachelor’s degree, with 30% of them being Post-Graduate degree holders. This demonstrates the fact that, majority of the respondents have had formal education and can understand technological innovations and changes with the use of mobile money services. They also are familiar with the operations of commercial banking and for that reasons are likely to adopt and use the service for their benefit. According to Osei-Assibey (2014) “where perceived risk was significant factor in the adoption of mobile money, the characteristics of the respondent indicate educated/literate respondents who are more abreast with current technology, have no level of uncertainty regarding the adoption and usage of mobile money”.

<table>
<thead>
<tr>
<th>Diploma/Certification</th>
<th>14</th>
<th>7%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bachelor’s Degree</td>
<td>116</td>
<td>62%</td>
</tr>
<tr>
<td>Masters/Doctorate</td>
<td>57</td>
<td>30%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>188</strong></td>
<td><strong>100%</strong></td>
</tr>
</tbody>
</table>

Source: Field Date (2018)
4.2.2 Tenure and Mobile Money Adoption Channel

Respondents were categorized according to their banks and the number of years with the banks. They were further segregated based on the channels that assisted in enrolling them onto the mobile money service. This is relevant for the study as it was used to verify the length of service and the probability of adopting a channel in the promoting of products and services.

Table 4.2 Demography of Respondents (Bank, Years and Adoption Channel)

<table>
<thead>
<tr>
<th>Variable</th>
<th>Count</th>
<th>Column N %</th>
</tr>
</thead>
<tbody>
<tr>
<td>BANK OF RESPONDENT</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fidelity Bank</td>
<td>63</td>
<td>34%</td>
</tr>
<tr>
<td>GCB Bank</td>
<td>125</td>
<td>66%</td>
</tr>
<tr>
<td>Total</td>
<td>188</td>
<td>100%</td>
</tr>
<tr>
<td>How many years have you been with the Bank</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Less than 1 year</td>
<td>7</td>
<td>3.7%</td>
</tr>
<tr>
<td>2-5 years</td>
<td>46</td>
<td>24.5%</td>
</tr>
<tr>
<td>6-10 years</td>
<td>87</td>
<td>46.3%</td>
</tr>
<tr>
<td>More than 10 Years</td>
<td>48</td>
<td>25.5%</td>
</tr>
<tr>
<td>Total</td>
<td>188</td>
<td>100.0%</td>
</tr>
<tr>
<td>ADOPTION CHANNEL OF MOBILE MONEY</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Friend</td>
<td>17</td>
<td>9.0%</td>
</tr>
<tr>
<td>Family</td>
<td>59</td>
<td>31.4%</td>
</tr>
<tr>
<td>Telecom Provider (MTN, Vodafone, etc)</td>
<td>51</td>
<td>27.1%</td>
</tr>
<tr>
<td>Communication from the bank</td>
<td>40</td>
<td>21.3%</td>
</tr>
<tr>
<td>Bank’s Relationship Manager</td>
<td>15</td>
<td>8.0%</td>
</tr>
<tr>
<td>Other (please specify)</td>
<td>6</td>
<td>3.2%</td>
</tr>
<tr>
<td>Total</td>
<td>188</td>
<td>100%</td>
</tr>
</tbody>
</table>

Source: Field Data (2018)

Table 4.1 reflects that, majority of the respondents were from GCB bank in view of the targeted population percentage split of customers using mobile money services in the various banks. 125 (66%) of the respondents were from GCB Bank, and 34% (63) respondents from Fidelity Bank. With regards to the number of years respondent had been with their respective banks, 3.7% had been with either of the banks under 1 year, whilst 24.5% had been with the bank between 2 and 5 years. Also, 46.3% has been with the bank between 6 and 10 years and 25.5% has also been with
the bank for more than 10 years. The length of service of a customer at a bank is a good indication of the right practices and decision-making process of that bank. (Ankrah, 2015). The tenure of customers at a bank increases with the bank satisfying the need of that consumer. Additionally, the banks’ products and services are also vital to the sustenance of the customer’s loyalty. The high tenure plays a very significant role in modern banking since almost all the banking services are repetitive (Ankrah, 2015).

Furthermore, the respondents were asked to select their mobile money service adoption channels. The main objective was to measure the impact of the banks communication on the respondents’ service adoption behaviour. From the Table 4.1, 17 (9%) of the respondents were informed of the service by their friends, whilst 59 (31.4%) had the information of the mobile money services from their family members. Another 27.1% (51) were directly informed by their mobile telecommunication companies, 21.3% (40) more of the respondents got the information from their banks, 15 (8%) got informed on their interactions with their bank relationship managers. Finally, 6 (3.2%) used other sources to know about the mobile money services. The channel adopted during the early stages of a service is vital to its use and its overall success (Bampoe, 2015). With a high adoption of mm usage through F&F, telecom provider, bank etc, usage is guaranteed

4.2.3 Reasons for Adopting Mobile Money services

Various factors were assigned by respondents as the reasons for adopting mobile money. This ranged from using the service to buy airtime to checking their bank balances from the mobile money platform. Table 4.3 represents the views of the respondents. The descriptive mean statistics gave an impression of the reason for mobile money adoption amongst respondents in terms of the
level of importance associated to the items. This is because the its shows on the average the total number of respondents who agreed or disagreed with the statement. Therefore, the means was use to rank in order of importance.

Table 4.3: Responses on Reasons for Mobile Money Adoption

<table>
<thead>
<tr>
<th>Variable</th>
<th>Q7_Mobile Money Service Adoption</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Not At All</td>
</tr>
<tr>
<td></td>
<td>Mean</td>
</tr>
<tr>
<td>Buying Airtime</td>
<td>1.43</td>
</tr>
<tr>
<td>Receiving Money</td>
<td>1.83</td>
</tr>
<tr>
<td>Paying Bills</td>
<td>2.83</td>
</tr>
<tr>
<td>Saving /Depositing</td>
<td>2.87</td>
</tr>
<tr>
<td>Sending Money</td>
<td>3.22</td>
</tr>
<tr>
<td>Paying School Fees</td>
<td>3.75</td>
</tr>
<tr>
<td>Withdrawals</td>
<td>3.84</td>
</tr>
<tr>
<td>Checking my account balance with banks</td>
<td>4.09</td>
</tr>
</tbody>
</table>

Source: Field Data (2018)

Respondents using the mobile money services for checking their account balance with the bank recorded a high all mean rate of 4.32. This was followed by those using the services to do withdrawals at a mean of 4.14. Paying schools is the third most important reasons stated by respondents for adopting mobile money services with an average mean rate of 4.05. Additionally, sending money to families and friends recorded an average of 3.41. Furthermore a 3.08 average mean of the respondents indicated that, they use mobile money services for saving and depositing money to their bank account. A group of respondents with a mean score of 3.04 also stated that, their adoption of mobile money services is a because of bill payment of utilities such as - electricity
and water, cable TV subscriptions among other. Furthermore, with an average mean of 2.35 respondents affirmed their reasons for adopting mobile money services as receiving money. These results suggest that, banking services are gradually shifting from traditional to digital or alternative means of accessing banking services. Banks have also taken strategic decisions to enhance their services through electronic means, like mobile money, web, internet banking.

Ghana is no exception, the Bank of Ghana has confirmed the mobile money penetration rate in the “country has seen an astronomical rise for the fourth year running with last year’s value of transaction reaching GHS 35.4billion, an increment of more than 216 percent as at end of 2016” (Bank of Ghana Annual Report, 2016).

4.2.3 **Perceived Ease of Use of Mobile Money services**

It is noted from reviewed literature that, the Perceived Ease of Use and adoption of mobile money services has been one of the reasons for its astronomical rise in the last five years (Bampoe, 2015). Mobile money services have provided options for paying for goods and services, paying for utilities, receiving money from friend and families. Similar to reason for mobile money adoption, this mean statistics for this section was also used in ranking items of ease of use in relation to mobile money services.

<table>
<thead>
<tr>
<th>Table 4.4: Responses on ease of Use of Mobile Money Services</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Variable</strong></td>
</tr>
<tr>
<td>---------------</td>
</tr>
<tr>
<td>I find mobile money easy to use</td>
</tr>
<tr>
<td>Sending Money to recipients are easy</td>
</tr>
</tbody>
</table>
The registration procedure is easy for me | 3.90 | 3.59 | 3.78 | 4.36 | 4.73 | 4.07
The interface with mobile money is easy to use | 4.70 | 3.85 | 3.94 | 4.47 | 4.78 | 4.35
Mobile money process is easy to remember | 4.39 | 4.08 | 4.11 | 4.44 | 4.79 | 4.36

Source: Field Data (2018)

From the results above (Table 4.4), easy recall of mobile money process had the highest average mean score of 4.36, followed by “the interface with mobile money is easy to use” with an average mean score of 4.35. Furthermore the “registration procedure is easy” for the respondents with a score of 4.07. Additionally, respondents are also impressed with sending money to friends (3.63) and generally finding mobile money easy (2.95). This implies that, overall respondents find the mobile money service seamless and happy to use it. Scholars have confirmed that one of the vital means of adopting a technological change within an environment, the particular change must be easy to adopt otherwise or it will be defeated. Davies (1989), confirmed this view by stating “the degree to which a person believes that using a particular system must be free of effort” In mobile money services, it includes “registration procedures”, “ease of use of the payment procedure”, “easy access to customer services”, “minimal steps required to make a payment”, “appropriate screen size” and “input capabilities”.

4.2.4 Perceived Usefulness of Mobile Money services

Perceived usefulness is an important component of any new technological change. A particular activity must be useful for any new method to be adopted. Studies on consumer behaviour, have shown that perceived usefulness determines intention to use a service. Also, the extent to which a consumer finds the mobile money useful may depend on the relative adoption of the service. If the “mobility and easier accessibility characteristics of mobile services leads to a consumer belief that the mobile money service is better than its predecessors (other money transfer services) then that
will affect its perceived usefulness and the ultimate reason people exploit mobile money could be that they find them useful” (Luarn & Lin, 2005). The responses presented in Table 4.5 provides a mean analysis statistic that ranks items of perceived usefulness in relation to mobile money services.

Table 4.5 Responses on Perceived Usefulness of Mobile Money Services

<table>
<thead>
<tr>
<th>Variable</th>
<th>PERCEIVED USEFULNESS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Strongly Disagree</td>
</tr>
<tr>
<td></td>
<td>Mean</td>
</tr>
<tr>
<td>Mobile money have control over my financial activities</td>
<td>0</td>
</tr>
<tr>
<td>Using mobile money enhances my effectiveness and efficiency in my life</td>
<td>0</td>
</tr>
<tr>
<td>I believe the advantages of mobile money would outweigh the disadvantages</td>
<td>0</td>
</tr>
<tr>
<td>I find mobile money a useful way of making payment</td>
<td>0</td>
</tr>
<tr>
<td>Mobile money services have improved my performance in my daily activities.</td>
<td>0</td>
</tr>
<tr>
<td>MM makes it easier to conduct transactions</td>
<td>0</td>
</tr>
<tr>
<td>Mobile money helps save time</td>
<td>0</td>
</tr>
<tr>
<td>Mobile money helps me accomplish task quickly.</td>
<td>0</td>
</tr>
</tbody>
</table>

Source: Field Data (2018)

The researcher analyzed the main usefulness for adopting mobile money services. This is presented in table 4.5. Respondents indicated that, mobile money helps them to accomplish tasks quickly with an average mean of 5.0. Respondents also stated that mobile money services helps them to save time, relatively other respondents also believe that mobile money services gives them the
edge to conduct transactions easily, 4.9. Two variables recorded the same average mean of 4.8 (useful way of making payment and mobile money services have improved respondents’ performance in their daily activities). The other variables are that the advantages of mobile money services outweigh the disadvantages with a score of 4.6 average mean, Mobile money enhances effectiveness and efficiency of life with a score of 4.3, whilst Mobile money have control over my financial activities with a score of 3.5 mean. Consumers are using mobile money services for important tasks such as paying for goods and services, utilities, among others. Therefore, it has become an essential means of handling many high-level functions that would have called for the consumers directly visiting those service points. Financial institutions must as a matter of course define their business models to integrate other business alternatives like e-commerce to allow bank customers derive maximum benefits from these products and services.

4.2.4 Perceived Trust of Mobile Money services

One of the prerequisite for the use and usefulness of mobile money services is the ability of the users to trust the service to deliver their expectations. Trusting a service means ensuring that, the service has the ability to minimize risks and give adequate assurance and confidence. It also means using the service devoid of any risks and associated challenges. The mobile money service setting requires an element of trust. In order to ensure effective trust for the service, customers must eliminate distrust. The responses presented below, shows a mean analysis that shows a ranking of the items for perceived trust in relations to mobile money services.
Table 4.6 Responses on Perceived Trust of Mobile Money Services

<table>
<thead>
<tr>
<th>Variable</th>
<th>PERCEIVED TRUST</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th>Average</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Strongly Disagree</td>
<td>Disagree</td>
<td>Neutral</td>
<td>Agree</td>
<td>Strongly Agree</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Mean</td>
<td>Mean</td>
<td>Mean</td>
<td>Mean</td>
<td>Mean</td>
<td></td>
</tr>
<tr>
<td>Network Problems does not affect the transactions</td>
<td>2.50</td>
<td>2.00</td>
<td>2.00</td>
<td>3.33</td>
<td>3.00</td>
<td>2.57</td>
</tr>
<tr>
<td>There is a low risk of other people tampering with my personal information during the transaction.</td>
<td>3.00</td>
<td>4.00</td>
<td>3.00</td>
<td>3.67</td>
<td>4.00</td>
<td>3.53</td>
</tr>
<tr>
<td>I receive exact money when it is sent to me</td>
<td>3.67</td>
<td>3.38</td>
<td>3.71</td>
<td>4.21</td>
<td>4.88</td>
<td>3.97</td>
</tr>
<tr>
<td>Mobile money keeps proper records of all transactions with the service providers</td>
<td>4.33</td>
<td>3.88</td>
<td>3.41</td>
<td>4.06</td>
<td>4.86</td>
<td>4.11</td>
</tr>
<tr>
<td>It is relatively difficult to steal money from my mobile money wallet</td>
<td>3.00</td>
<td>5.00</td>
<td>5.00</td>
<td>3.67</td>
<td>4.20</td>
<td>4.17</td>
</tr>
<tr>
<td>Trust Mobile Money to send money correctly</td>
<td>4.67</td>
<td>4.38</td>
<td>3.58</td>
<td>4.07</td>
<td>4.82</td>
<td>4.30</td>
</tr>
<tr>
<td>Mobile money services are trustworthy</td>
<td>4.50</td>
<td>5.00</td>
<td>5.00</td>
<td>4.33</td>
<td>4.67</td>
<td>4.70</td>
</tr>
<tr>
<td>Mobile Money service information is securely kept from outsiders</td>
<td>4.50</td>
<td>5.00</td>
<td>5.00</td>
<td>4.67</td>
<td>4.83</td>
<td>4.80</td>
</tr>
<tr>
<td>My Money is safe even if I lose my mobile phone</td>
<td>4.50</td>
<td>5.00</td>
<td>5.00</td>
<td>4.67</td>
<td>4.83</td>
<td>4.80</td>
</tr>
<tr>
<td>I trust that if I lose my mobile phone, I will not lose my money</td>
<td>5.00</td>
<td>5.00</td>
<td>5.00</td>
<td>5.00</td>
<td>5.00</td>
<td>5.00</td>
</tr>
</tbody>
</table>

Source: Field Data (2018)

From the above table (4.6) respondents present a strong view of the issues of perceived trust. Using the mean score model, respondents who believe that losing their phones will have no effect on their money had an average mean score of 5.0, those who believe mobile money is safe recorded a score of 4.80 Additionally respondents believe that mobile money service information is kept securely from outsiders with a score of 4.80, mobile money services are trustworthy had score of 4.70, trust mobile money to send money correctly with a score of 4.30. Issues of relative difficulty in stealing from mobile money wallet and mobile money service keeps proper records of transactions recorded an average mean score of 4.17 and 4.11 respectively. Responses for
questions on receiving exact money sent, low risks of tampering with money on the account and network issues not affecting their transactions all have mean scores from 3.97-2.57. It can be inferred from the above table that, majority of respondents affirmed their trust in the use of mobile money and the banks to keep their transactional documents secure.

Mallat (2007) argued that “perceived trust is a significant determinant influencing consumers’ intention towards electronic commerce transactions including mobile money services”. It is important to emphasize that, the complexity of using the mobile money services cannot necessarily be attributed to the trustworthiness of the service provider, but privacy and reliability are seen as antecedents to perceived trust. The analysis also revealed some astonishing results from the gender perspective in relation to perceived trust as seen from the outcome of the cross tabulations in the next section.

**Table 4.7: Responses of Gender versus Trust of Mobile Money Services**

<table>
<thead>
<tr>
<th>Details</th>
<th>Male</th>
<th>Female</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trust Mobile Money to send money correctly</td>
<td>4.6</td>
<td>4.1</td>
</tr>
<tr>
<td>I receive exact money when it is sent to me</td>
<td>4.7</td>
<td>4.5</td>
</tr>
<tr>
<td>Mobile money keeps proper records of all transactions with the service providers</td>
<td>4.7</td>
<td>4.3</td>
</tr>
<tr>
<td>Mobile money services are trustworthy</td>
<td>4.9</td>
<td>4.0</td>
</tr>
<tr>
<td>I trust that if I lose my mobile phone, I will not lose my money</td>
<td>4.9</td>
<td>5.0</td>
</tr>
<tr>
<td>Mobile Money service information is securely kept from outsiders</td>
<td>4.9</td>
<td>5.0</td>
</tr>
<tr>
<td>My Money is safe even if I lose my mobile phone</td>
<td>4.9</td>
<td>5.0</td>
</tr>
<tr>
<td>Network Problems does not affect the transactions</td>
<td>2.6</td>
<td>4.0</td>
</tr>
<tr>
<td>It is relatively difficult to steal money from my mobile money wallet</td>
<td>4.2</td>
<td>5.0</td>
</tr>
<tr>
<td>There is a low risk of other people tampering with my personal information during the transaction</td>
<td>4.3</td>
<td>5.0</td>
</tr>
<tr>
<td>I trust that if I lose my mobile phone, I will not lose my money</td>
<td>5.0</td>
<td>5.0</td>
</tr>
</tbody>
</table>

Source: Field Data (2018)
Table (4.7) presents a significant revelation indicating that female respondents are very concerned about trust for mobile money services than their male counterparts. Variables such as network problems, difficulty with theft of money and the risks associated with the service are more important to female respondents than the male counterparts. Both respondents also noted with a mean score of 5.0 that, the issues of security and trust are prime concerns for all of them. The male respondents agreed that mobile money service is trusted shown by a mean score of 4.9. Other respondents noted that mobile money keeps proper accounts of their transactions and receives exact money sent both by a score of 4.7. Finally, both genders indicated that, trusting mobile money services is a prime cause of its overall success.

4.2.5 **Challenges with Mobile Money Services**

The adoption of any new services or system will come with its own attendant challenges. The astronomical increase in the adoption of mobile money services in Ghana presents an opportunity to identify the inherent challenges with the ease and usefulness of mobile money service. The researcher believes that, decision makers must look at the variables affected It is believed that, when an individual sees mobile money services overcoming some of the challenges they have, there is a great likelihood of increased adoption. The responses are presented in Table 4.8.
Table 4.8 Responses on Challenges of Mobile Money Services- Service Delivery

<table>
<thead>
<tr>
<th>Variable</th>
<th>DIFFICULTIES WITH USE OF MOBILE MONEY SERVICE</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Strongly Disagree</td>
</tr>
<tr>
<td></td>
<td>Mean</td>
</tr>
<tr>
<td>Bank Charges</td>
<td>1.15</td>
</tr>
<tr>
<td>Forgetting your PIN</td>
<td>1.00</td>
</tr>
<tr>
<td>The amount of money you can conveniently cash out from a merchant</td>
<td>3.51</td>
</tr>
<tr>
<td>The registration process is difficult</td>
<td>3.71</td>
</tr>
<tr>
<td>Mobile money fraud</td>
<td>3.69</td>
</tr>
<tr>
<td>Knowing how to use the menu</td>
<td>4.40</td>
</tr>
<tr>
<td>The availability of a merchant close enough to your location at any point in time</td>
<td>4.77</td>
</tr>
<tr>
<td>Cost of using the service</td>
<td>4.34</td>
</tr>
<tr>
<td>Bank charges and commissions</td>
<td>4.36</td>
</tr>
<tr>
<td>Unstable systems</td>
<td>4.30</td>
</tr>
<tr>
<td>Poor customer service from Agents</td>
<td>4.43</td>
</tr>
</tbody>
</table>

Source: Field Data (2018)

From the above table (4.8) respondents stated challenges affecting the use and usefulness of mobile money service. Using the average mean score, poor customer service agents recorded a high score of 4.3, again the challenges with the bank and mobile money systems followed with a score of 4.50. Other responses recorded the following average mean scores, bank charges and commissions 4.47, cost of using the service 4.38, and merchant availability 4.35. Other responses recorded are an average mean score of 4.20 for difficult with the use of the mobile money menu. 3.99 mean average of respondents having challenges with mobile money fraud, registration process at 3.96.
The others follow in succession, limits with money to cash out with a score of 3.96, forgetting PIN at a score of 2.56 and finally bank charges with a score 2.18.

It is indicative from the above details from the respondents the need to relook at the challenges affecting mobile money services. Majority of the responses relate to human and systemic problems. It is imperative that, ease of use, usefulness, and perceived trust of the mobile money services are critical to any financial transactions. Therefore, banks and all stakeholders must resolve the challenges. The use of mobile money service has come so far in Ghana. Most of the respondents believe the limitations could be avoided to ensure the smooth running of the service. Bampoe (2015 and Amoh (2016) are of the opinion that, if these challenges are surmounted, then the service will be helpful for time saving, quick means of making payment among others. Furtherance to the challenges, responses were also recorded for challenges faced with Mobile money technical challenges in Figure 4.0

In addition to the general mobile money service challenges, the service tend to be affected by technical or system challenges that frustrate the consumer appreciation of , and has the likelihood of impacting the perceived use and trust . The presentation in figure 4.1 highlights these challenges.
Figure 4.1: Responses on Challenges with Mobile Money – Technical

Field Data, 2018

From the graph in Figure 4.1 above, 12 (6%) of the respondents had indicated challenges with registration of mobile money services through the bank, 5 (3%) believe that there are technical challenges with ease of use for case in mobile money services, another 15 (8%) specified difficulties with ease of use in cash out of mobile money service. Moreover, some respondents stated system challenges with the service with 6 (3%) among others. Out of the 188 respondents who completed the survey, 150 (80%) avowed that, there are challenges with the current service environment that needs a comprehensive approach to deal with the challenges of mobile money services
4.2.6 Recommendations of Mobile money service to Commercial Banks

Mobile money services have permeated all facets of the financial sector in Ghana, specifically in the banking and services sectors (GSMA, 2017). The trend has left industry watchers believing that, the next areas of focus will provide the impetus to ensure total financial inclusion. The thin line between Mobile money services and traditional banking has also been explored by scholars and other researchers. Siagal (2015), stated that mobile money has dominated the financial sector in Africa, but the traditional banking sector will be able to compete when they are much better equipped to lead the sector in the long term. Frimpong and Gyamfi (2016), have also noted that, banks are beginning to edge their way closer by building partnerships with the telecommunication companies. This allows banks to capitalize on the banks existing client bases and communications towers, while telecommunication companies are able to offer banking products currently out of their reach to their existing customers. The responses on the recommendations is presented in Table (4.9).

Table 4.9: Responses on Recommendations of Mobile Money Service

<table>
<thead>
<tr>
<th>Recommendations of Mobile money Service</th>
<th>Frequency</th>
<th>Column N %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Great opportunity to save time and ensure convenience</td>
<td>45</td>
<td>24%</td>
</tr>
<tr>
<td>I believe MoMo Banks should adopt it and also charges on deposit into another person’s account should be abolished.</td>
<td>34</td>
<td>18%</td>
</tr>
<tr>
<td>Mobile Money is actually the future of cashless economy</td>
<td>39</td>
<td>21%</td>
</tr>
<tr>
<td>Mobile Money services in Ghana are a competition to our banks and will/can take over the banking sector.</td>
<td>17</td>
<td>9%</td>
</tr>
<tr>
<td>MoMo is the way out for electronic payment in Ghana the mobile money service has great future</td>
<td>32</td>
<td>17%</td>
</tr>
<tr>
<td>Total</td>
<td>188</td>
<td>100%</td>
</tr>
</tbody>
</table>

Source: Field Data (2018)
Table (4.9) indicates that, out of 188 respondents, 45 (24%) stated that there is a great opportunity to save time and ensure convenience with mobile money service from the banks. Another group of respondents 34 (18%) believe that banks have to totally integrate mobile money services into their already existing electronic banking suites. Furthermore, 29 (21%) of the respondents avowed for mobile money services as the future of the cashless economy; Seventeen (9%) postulated that, the bank’s failure to integrate mobile money services could spell doom for them. Some respondents are also of the view that mobile money services have provided the avenue for electronic payment in Ghana represented by 17%. Finally, twenty-one (11%) respondents stated that, the future of mobile money services is with us today. All the responses seek to suggest that, mobile money services is the next generation driver of the financial revolution.

The GSMA, in their Industry report on mobile money in 2017 noted that, “It has been an incredible decade of the mobile money industry. We have seen how one connected handset can transform the life of not just its owner, but also the lives of his or her family and the broader community”. Mobile financial services have now achieved a key milestone where more than half a billion mobile money accounts have been activated by the end of 2016. The GSMA 2017 has estimated that more than 170 million mobile money active accounts are active all over the world.

4.3 Conclusion

This chapter digested the following issues: the reasons for the adoption of mobile money services by customers of the GCB Bank and Fidelity Bank Ghana Limited, Perceived ease and use of mobile money, perceived usefulness assigned by customers of the bank. Perceived trust of the service was also explored. It looked further at the challenges associated with the use of the mobile
money services, and the opinions from the sampled population on the recommendations for the banks to improve the service. From the data analysis, all the banks sampled have fully aligned the mobile money services as part of its electronic banking products. The analysis also revealed that, the perceived ease of use, usefulness and trust are the main determinants for the adoption of mobile money services. It emerged from the analysis that, the major barrier to seamless implementation of the mobile money services by commercial banks is the stability of the system, and the overall interest and trust in the service. The next chapter considers the findings from the survey and its implication for the operations and future growth of the selected banks.
CHAPTER FIVE
DISCUSSIONS OF MAJOR FINDINGS

5.1 Introduction

The adoption of mobile money services in the world has assumed an astronomical increase. According to the GSMA (2017), Mobile money services are strengthening the banking industry. Between September 2015 and June 2016, the volume of flows to and from the banks globally, grew by more than 120%. The case in Ghana is no different. The Bank of Ghana confirmed in January 2017, that the amount of money mobilized outside the banking system through mobile money reached a record of GHC 2.3 billion. The amount represents an 84.6% growth over the December 2016 amount of GHC 1.3 billion. This has a major impact on the overall performance of the banking sector. Therefore, commercial banks in Ghana must change their business models to ensure their substance.

The past few years have been very difficult times for the financial industry in Ghana. They have had to cope with challenges such as, slower economic turnover, increased competition from the growing number of new banks and microfinance institutions and most recently, new higher recapitalization requirements. This is evident from the collapse of Capital Bank and UT Bank. This has been compounded by the astronomical rise of mobile money services. There are however, opportunities existing for banks to take advantage of the emergence and adoption of mobile money services. The study therefore seeks to understand the nature of the adoption of the mobile money services offered by the banks.
Based on the research objectives of the study indicated in chapter one, this section discusses the findings of the study. The study sought to assess the adoption of mobile money services in Ghana: A case of GCB Bank and Fidelity Bank Ghana Limited. Four exogenous variables on behavioural intentions from users of mobile money services has been examined in this study. Specifically, the study sought to identify the key factors influencing mobile money adoption and usage by commercial bank customers. It also identified perceived ease and usefulness of mobile money services. The final object of the study identified the main challenges associated with the adoption of the mobile money, and to recommend appropriate models for the improvement and integration of mobile money services into the banking industry.

A proportionate sample size of 188 were used for the study. Convenience sampling was used for the selection of the bank customers. The instrument used in this study was the questionnaire. The Statistical Package for Social Sciences (SPSS) 2.0 was used for the analysis of the data. Simple frequencies, percentages, charts, cross tabulations. A number of major findings have been made and will be discussed. Details are explained below.

5.2 Reasons for Adoption of mobile money services by Customers

This section discusses the major reasons for the adoption of mobile money by customers of the selected banks. The study revealed that mobile money services adoption is influenced by “perceived usefulness”, “perceived ease of use”, “perceived trust”, “perceived cost of use” and “social influence”. Responses from the study such as “Mobile money services have improved my performance in my daily activities” together with “Mobile money helps me accomplish task quickly” have aided and supported the view of the theoretical framework. It was evident that, the
main reasons for adopting mobile money services were the various services on the mobile money platform. Customers have been using the mobile money service for checking their bank balances, withdrawals – cash out (the ability to pull money from your bank account to your mobile money wallet), paying of school fees among others. Customers have resorted to the easy option of not visiting the banks physically but have taken advantage of the new technological innovations. This is in line with the banks objective of using the new technologies to reduce customer congestion at its branches.

Mobile money has become the vehicle to drive financial seamless banking services. The findings of this research is supported by Osei-Assibey (2014) he suggested that, “among other things participants are more likely to adopt and use of mobile money service when interface it is seen to be user friendly, when they see the service to useful, reliable and relatively cheaper and can be counted on to deliver as expected”. Furthermore, this view has also been supported by Donovan, (2012) in the case of MPESA in Kenya that, “the adoption of mobile money services could be due to the interplay of reason, force and chance”.

The results showed that mobile money services are used for buying airtime, receiving and transferring money. Other uses like paying bills and for savings were relatively used by fewer respondents. The outcomes of this study demonstrated that bank customers employ mobile money services in purchasing airtime, accepting and transferring cash. Others use it for paying bill whiles some few employ it as a savings platform. The use of mobile money services according to Gutierrez and Choi (2014), is for sending and receiving money hence important for its ease and
usefulness. Looking at the respondents’ age and level of education, their access to the banking system is high. Therefore, they may have less need to use mobile money for savings.

5.3 Ease and Usefulness of Mobile money services

The study revealed that ease and usefulness are the major drivers for accelerating growth of mobile money services within the selected banks. Findings from the study revealed that, the main determinant for the use of mobile financial services are perceived ease and usefulness. It further suggests that a user’s intention to use mobile money will surge, if they find that the service is easy and useful.

The study further revealed that perceived usefulness is a noteworthy attribute that has sustained the UTAUT in the context of mobile commerce (e.g. Luarn & Lin, 2005) and electronic-commerce (e.g. Guriting & Ndubisi, 2006). Perceived ease and usefulness are two dominant means of influencing the intention to use a new technology. Nevertheless, the study contradicts the study by Ramayah and Ignatius (2005), “who determined the influence of perceived usefulness, perceived ease of use and perceived enjoyment on intention to shop online, they found that perceive usefulness was not significantly associated with intention to shop online”.

However, mobile money providers and banks should implement reliable systems that will meet users’ expectations, as well as ensure they provide helpful and quality information to user. Commercial banks must therefore find easy and useful means of developing the right strategy to drive ease and usefulness with mobile money services. These variables will result in an increase usage of the overall bank’s products and services. For banks to ensure growth and sustainability
within the banking industry, decision makers should implement the right execution strategies. Mobile Money services in all of this, has proven to be the next innovative product to guarantee the bank’s profitability.

5.4 Trust of Mobile Money Services

Customer trust is a vital requirement for mobile money services, and financial services more broadly. The study findings indicate the sensitivity to trust of the mobile money services. Females are cautious about trust and its effects on cash in and cash out, whiles the male counterpart believe that, the mobile money service is very trustworthy, and they will receive the exact amount transacted or transferred. However, it contradicts prior research by Wei et al. (2009) which suggest that “trust does not have a significant effect on intention to use mobile commerce applications in Malaysia”, however, that study was conducted in a different context other than Ghana. The study is strongly supported by Heijden et al. (2003), argument that, distrust for mobile money services can be said to be due to past experience with the banking system, including automated teller machines and debit card issues, while distrust for mobile network services is due to their unreliable network coverage. Consequently, customers will not use the service when they deemed it as not useful and non-safe.

The study also revealed that, perceived risks has a relationship with perceived trust. Where the perceived risks intensify, mobile money service will record a lower rate of intention to use. Therefore, “perceived risk is believed to be a predictor and barrier to mobile money services and will in the long run be expected to negatively influence consumer’s intent to service information, loss of mobile phones, tampering with personal information, and network challenges. The results
indicated that the level of risk perceived to be inherent in the use of the mobile money is inversely related to the likelihood of consumers adopting that service. This is corroborated from the study done by Bampoe, (2015) on mobile money services in Ghana and also explained that, perceived trust is vital for mobile money adoption.

The findings also support previous study on the effect of perceived security risks on internet banking it proved that, risks is a vital attribute needed in the mobile financial industry. For instance, Pavlou (2002) “argues that perceived risk arises from the uncertainty a customer faces when they cannot foresee the consequences of their e-banking transactions”. The findings affirm the results of Chung and Paynter (2002) which identified consumers “fears regarding transaction security as an inhibitor to the adoption of internet banking”. According to Jun & Cai (2001), “customers in emerging economies (like Ghana) are have sentiments over technology-based service delivery systems that will not function as expected, Slow response time after the mobile interaction leads to a delay of service delivery and causes customers to be unsure that the transaction was completed”.

5.5 Challenges Associated with the Use of Mobile Money Services

Several factors affect the successful ease and usefulness of money services in Ghana. The findings revealed the challenges faced by customers of the selected banks, with the usage of mobile money services. It was evident that, the service has some inherent challenges that have the ability of deterring customers from having a smooth service delivery. These are poor customer service by bank staff, unstable systems, banks charges and commissions, cost of using the service, the availability of a merchant close enough to customers’ location at any point in time, knowledge of
the mobile money menu, mobile money fraud, the initial registration process, limit of the amount to be withdrawn, and forgetful behaviours.

It is very critical that, the growth and overall usage is highly dependent on the need to eliminate some of these situations. Policy and decision makers must ensure appropriate guidelines to facilitate the ease and use of mobile money services in the financial industry. This finding is aligned to the arguments from Gan, et. al. (2006), in a study done in New Zealand, explaining that service quality, perceived risk factors, bank charges, cost of using a service among others are the dominant variables that could influence and affect a consumer from accessing various banking products and services. Furthermore, there is a held view that consumers will transact electronic banking services, once convenience and security – fraud issues completely eliminated.

The challenges could be eliminated through a few of the strategies below:

1. Comprehensive education for the bank customers
2. Needs of the customers must be understood in the light the technology trend and business needs.
3. Capacity building for the bank staff.
4. Ensuring stability of the IT systems
5. Review of bank charges on the use of the service
CHAPTER SIX
SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

6.1 Introduction
This chapter offers an overview of the key assessment of mobile money adoption, highlights the scholarly and managerial contributions providing recommendation, and also providing important limitations and future research directions.

6.2 Summary
This thesis assessed the factors that influence the adoption of mobile money in developing economy and identifies reasons for using mobile money services frequently. Bhattacherjee et al. (2008) indicated that the long-term viability of mobile financial services and its ultimate achievement depends on its continued usage rather than first-time usage. Therefore, the research investigates the factors that influence the Ghanaian consumer to adopt and continuously use mobile money services in addition to traditional commercial banking services.

The study employed a quantitative technique, using a cross-sectional approach to sample two hundred and eighty-eight customers of GCB Bank and Fidelity Ghana Limited. The participants were sampled using intercept convenience sampling procedure. Questionnaire was the fundamental research instruments which served as the source of primary data. Demographic and other major variables were descriptively analysed, and the findings presented in the previous chapter.
The results for the analysis from the study showed that bank customers used the mobile money services mostly for checking bank account balances, withdrawals, paying school fees, sending money, and saving or depositing money. Other uses like buying airtime, receiving and transferring money were performed by fewer respondents. The study also revealed that factors such perceived usefulness, perceived ease of use, perceived trust, perceived cost of use and social influence are vital to the adoption of mobile money services. Furthermore, the findings indicated that mobile money thrives with a high level of trust of the mobile money services. These are the effect of losing mobile phones and losing the money on the wallet, security of mobile money information, trust to send and receive the right money, stealing money from the wallet. Few responses also stated that, network problems and levels of risks are not really issues to consider in the larger state of things.

Again, the study revealed that, there were significant challenges that affect the ease and usefulness of mobile money services. This relates to poor customer service attitudes of the bank staff, unstable systems, bank charges and commissions, to mention a few. Issues of forgetful PINs and fraud were also highlighted.

6.3 Conclusion

Information and communications technology has completely changed the landscape of major industries and businesses around the globe. The hardest affected is the financial and telecommunications sectors. The dawn of the convergence era is closer than it was envisaged many years ago. Today, most of the financial transactions can be done from the comfort of one’s home without visiting the banking hall. Technology is no longer an enabler, but a business driver. In all over Africa, Asia and the Caribbean, mobile financial services are taking over and in some cases
assuming a different approach to meeting the needs of customers. Mobile financial services are
being used as catalyst for commercial banking growth, and leveraging banking growth, profitabili-
ty, and customer experience. While mobile money remains a leading payment platform in the de-
veloping world, the commercial landscape is shifting. Fintech players are bringing a new
wave of disruption.

In ninety-two (92) nations around the globe, mobile aided financial inclusion is providing
individuals access to straightforward computerized exchanges and the tools to better manage with
their finances. It has additionally been a portal to other financial administrations, for example,
insurance, investment funds, and credit. The effect of mobile money has been felt well beyond
transactions and accounts: individuals' lives have been enhanced by greater personal individual
security and a feeling of empowerment. This has been done through acquiring airtime and sending
money between family and friends, to an easier way to access and pay for basic essentials, for
example, water bills or school fees. Essentially, it has likewise aided in developing an age of
market entrepreneurs, who will shape the future in ways yet to be envisioned.

Africa’s response to the Mobile money revolution has been phenomenal. As of December 2016,
there were more than 277 million registered mobile money accounts, a pointedly higher number
contrasted with 178 million bank accounts in the area. Presently, there are 128 deployments in 39
nations—in seven of these nations, over 40% of the grown-up populace utilizes mobile money as
a component of regular daily existence, counting Kenya, Tanzania, Zimbabwe, Ghana, Uganda,
Gabon and Namibia. The area has likewise observed an advancement of mobile money use cases.
In 2011, P2P exchanges and airtime top-ups were the overwhelming use cases. However, in 2016,
the situation changed fundamentally with bill payments, bulk disbursements, international remittances and merchant payments growing exponentially, and now accounts for over 25% of the value in circulation. These new cases of new use do not just enable clients to be much more incorporated in the public arena, but on the other hand promotes added efficiencies among governments, organizations and SMEs. Mobile money has likewise served as a portal to other financial services such as; insurance, credit and savings. Credit specifically has experienced a positively steady development in the continent. GSMA (2017) report states that, there were 39 live mobile money-enabled credit service, up from four services in 2010.

Since the breakthrough of the first mobile money services in Ghana in 2009, new technologies and innovative business models such as mobile money (rather than branch-centered banking) have led to the creation of a mass market for affordable, accessible, and sustainable financial services for low-income people, small-scale entrepreneurs, and people in rural areas. This shift has helped lift the financial inclusion rate on the continent from 24 percent in 2011 to 43 percent in 2017 according to the GSMA (2017). The use of mobile money services generate data that can then be used to automatically assess the creditworthiness of the user, which opens up opportunities for lenders to give credit to people who otherwise lack collateral or a credit history. Greater geographical reach, lower cost, and speed also contribute to the expansion of these services.

Perceived usefulness, “perceived ease of use, perceived trust, perceived cost of use and social influence are the principle factors that impacts the adoption of mobile money services. Because, when a subscriber trusts that, the mobile money system is less complicated to use, cost involved in utilizing the service is lesser than a different service and has an assurance that adopters will get
future positive results (trust) in utilizing the service, their level of adoption builds up, thus more likely to influence their behavioural intention to adopt the service in the later on”.

Even though different reasons influence adoption and behavioural intentions of the chosen bank clients to utilize mobile money services, regulating financial activities was important to the perceived usefulness and the perceived ease of the service, unlike perceived risks, perceived trust and relative advantage towards the intent to use mobile money. The banked populace might be compelled to utilize mobile money as it can be utilized in services such as checking their balances, paying for child’s school fees, depositing or saving, transferring and receiving money. Also, families and companions who are utilizing portable cash can impact others to utilize. Once more, educational level, age and the level of education has the tendency to guarantee that people are much more open to innovation, so their family and friends did not influence their use of the mobile money services in areas of risks, trust and its relative advantage. Security, value and convenience as well as reliability are at the core of our mobile money proposition and mobile money services.

6.4 Recommendations

The following recommendations are given:

1. The need to create awareness through advertisements on the other uses of mobile money services such as paying school fees, checking account balances, withdrawals. New customers are likely to join based on the testimonies of the current users.
Among the factors of adoption, perceived trust of use was seen as a possible means of influencing the ease and use of mobile money service among the banks. This means the use of the service is prone to risks and security or fraud issues. The banks should keep the confidence of the customers on high footing through pragmatic actions. This could include, ensuring stable Information Technology (IT) systems, information on the need for customers to be security conscious with their mobile money accounts, promotion of convenience and endangering trust through balance notification and customer testimonials. This will reduce the level of risks perceived by some subscribers in relation to the service and increase the trust level among them. Furthermore, promotional activities that aim to heighten the interest of family and friends to attract other members of the family unto the service should be given a lot of attention.

Inherent challenges associated with the use of the mobile money service should be minimized through frequent customer engagement via SMS and emails, intensify bank staff training to enhance skills, revised bank commissions and charges in the medium to long term, review the total cost of using the service through quarterly subscriptions, and daily refresher sessions for customers on the features of the service. Sensitization sessions via the radio and Television would be an appropriate means of minimizing the risks associated with the service.

In addition, a long term strategic direction to work with the central bank to increase the limits with mobile money transactions will go a long way in boosting the use of the service.
5. A flat charge for all digital transactions, and a separate charge for money or cash transactions should be encouraged. This will further incentivize the use of the mobile money service across all the class of the population to achieve the financial inclusion strategy

6. Mobile money services should be relatively cheaper compared to other electronic banking products, such as Internet banking, Automated Teller Machine services, SMS Banking, Telephone banking, electronic funds transfer at pint of sale (EFTPOS)

7. The cost of push and pull should be reviewed downwards to promote increased transactions. Bank charges have proven to be a barrier to the growth of commercial banks in Ghana. It is imperative that cost of these transaction should wither be absorbed by the banks or shared by the bank and the customer. The advantage will be enormous to the enhancement of the adoption of mobile money services in Ghana.

8. A comprehensive or strategic plan should be in place to tackle fraud related vices. Fraud has and will remain a major challenge to Commercial Banks and other financial organization worldwide. This plan will help to build or boast the confidence of the customers. Customer assurance with the use of various products and services creates loyalty to the organization in the medium to long term.

6.5 Contribution to literature

In spite of the fact that there is a great deal of research done on the adoption of technology in many areas of industry, there are still very few work done on the impact of technology on mobile money services. This research hence adds to the little work done on mobile money adoption on behavioral
intention. It examines the role of perceive ease, usefulness and trust on the adoption of mobile money services.

Some African countries have utilized the "MPESA format" as the working model for driving mobile financial services. Hence, the outcome of this study may not be the same in different nations and may likewise contrast in view of sample sizes and social class of respondents. Research in the regions of mobile financial services has been done portable cash and orders versatile cash into two classes; portable installment and portable managing an account. This study in such manner has literature on consumer intention to use mobile money service in banks in Ghana looking at some specific variables culminated from the unified theory of acceptance.

6.6 Research limitations and Areas of Future Research

Presently the telecommunication companies in Ghana have over 23.9 million activate mobile money subscribes. However, the study focused on 288 respondents from GCB Bank and Fidelity Bank – Headquarters branch using a convenience approach. In view of this, the scope of the examination is restricted geographically and numerically as far as sample size and generalisation is concern. Furthermore, it was difficult getting a lot of respondents for the study due to the classified nature of bank transactions. There is therefore the need for future studies to expand the context of this study. Also, more banks could be investigated. Further research into the analysis of the assessment of the mobile money services of all the other banks could help to determine its impact on revenue and liquidity of the banks.
This thesis adopted a cross-sectional approach in obtaining data from the bank customers. It is therefore suggested the forthcoming studies can adopt a longitudinal approach to examine the relationship between the various mobile money adoption and its continued usage factors. Likewise, the adoption of mobile money service by bank customers could be evaluated in times of different financial situations to determine if there would be any changes in results between time periods. It would also be very interesting to subject this study to a case study approach to compare the findings. As a task for the future research, it could be interesting to study a comparison between the banks and the telecommunication companies’ adoption behaviours by their customers. Moreover, it could also be of interest to attempt to analyse the heterogeneity of the strategies followed by the banks themselves in the adoption of mobile money services and how these reflect on other electronic banking products and services.
References


Appendix A

SCHOOL OF INFORMATION AND COMMUNICATION STUDIES DEPARTMENT OF INFORMATION STUDIES UNIVERSITY OF GHANA, LEGON

I am a postgraduate student of the University of Ghana, Legon and this questionnaire forms part of my thesis research for MPhil in Information Studies. I am conducting a research with the topic “An assessment of Mobile money service adoption of commercial banks in Ghana: A Case study of Fidelity Bank and GCB Bank Ltd. Your contribution in completing this questionnaire is vital to the success of the study. This exercise is purely for academic purpose and all information will be kept strictly confidential. Thank you very much for participating in this study

Section A: Demographic Information

1. Gender: Male [ ] Female [ ]

2. Age:
   a. Less Than 18 [ ]
   b. 26-30 [ ]
   c. 31-40 [ ]
   d. 41-50 [ ]
   e. More than 51 [ ]

3. Educational Level
   a. No Education [ ]
   b. Primary [ ]
c. JHS

d. High School/SHS

e. Diploma/Certification

f. Bachelor’s Degree

g. Masters/Doctorate

4. Select your Bank from the List?

a. Fidelity Bank

b. GCB Bank

5. How many years have you been a customer of the Bank?

a. Less than 1 Year

b. 2-5 Years

c. 6-10 Years

d. More Than 10 Years

Section B: Mobile Money Adoption

6. Who introduced you to mobile money services?

a. Friend

b. Family

c. Telecom Provider (MTN, Vodafone, etc.)

d. Communication from the bank

e. Bank’s Relationship Manager
f. Others, Please specify  

7. Indicate the reasons for adopting mobile money services (Tick all that apply)

<table>
<thead>
<tr>
<th>Reasons for Adoption</th>
<th>Tick all that Apply</th>
</tr>
</thead>
<tbody>
<tr>
<td>Buying Airtime</td>
<td></td>
</tr>
<tr>
<td>Receiving Money</td>
<td></td>
</tr>
<tr>
<td>Paying Bills</td>
<td></td>
</tr>
<tr>
<td>Saving/Depositing</td>
<td></td>
</tr>
<tr>
<td>Sending Money</td>
<td></td>
</tr>
<tr>
<td>Paying School Fees</td>
<td></td>
</tr>
<tr>
<td>Withdrawals</td>
<td></td>
</tr>
<tr>
<td>Others</td>
<td></td>
</tr>
</tbody>
</table>

Section C: Ease and Usefulness of mobile money services among Bank Customers

Please indicate to which extent you agree with the following statements. (1= Strongly Disagree, 2=Disagree, 3=Neutral, 4=Agree, 5=Strongly Agree).

<table>
<thead>
<tr>
<th>Perceived Ease of Use</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Neutral</th>
<th>Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>8 I find mobile money easy to use</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9 Sending Money to recipients are easy</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10 The registration process is easy for me</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11 The interface with mobile money is easy to use</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Please indicate to which extent you agree with the following statements

(1= Strongly Disagree, 2=Disagree, 3=Neutral, 4=Agree, 5=Strongly Agree).

<table>
<thead>
<tr>
<th>Perceived Usefulness</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Neutral</th>
<th>Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>12 Mobile money process is easy to remember</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13 I find mobile money a useful way of making payment</td>
<td></td>
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<tr>
<td>14 Mobile money helps save time</td>
<td></td>
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<td></td>
<td></td>
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<tr>
<td>15 MM makes it easier to conduct transactions</td>
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</tr>
<tr>
<td>16 I believe the advantages of mobile money would outweigh the disadvantages</td>
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<tr>
<td>17 Mobile money helps me accomplish task quickly.</td>
<td></td>
<td></td>
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<tr>
<td>18 Mobile money have control over my financial activities</td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>19 Mobile money services have improved my performance in my daily activities</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>20 Using mobile money enhances my effectiveness and efficiency in my life</td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

Section D: Perceived Trust of Mobile Money Services

Please indicate to which extent you agree with the following statements (1= Strongly Disagree, 2=Disagree, 3=Neutral, 4=Agree, 5=Strongly Agree).

<table>
<thead>
<tr>
<th>Perceived Trust</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Neutral</th>
<th>Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>21 I trust Mobile Money to send money correctly</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Description</td>
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<td>-----------------------------------------------------------------------------</td>
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</tr>
<tr>
<td>22</td>
<td>I receive exact money when its sent to me</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>23</td>
<td>Mobile money keeps proper records of all transactions with the service providers</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>24</td>
<td>Mobile money services are trustworthy</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>25</td>
<td>I trust that if I lose my mobile phone, I will not lose my money</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>26</td>
<td>Mobile Money service information is securely kept from outsiders</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>27</td>
<td>My Money is safe even if I lose my mobile phone</td>
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<tr>
<td>28</td>
<td>Network Problems does not affect the transactions</td>
<td></td>
<td></td>
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<tr>
<td>29</td>
<td>It is relatively difficult to steal money from my mobile money wallet</td>
<td></td>
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<td></td>
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<tr>
<td>30</td>
<td>There is a low risk of other people tampering with my personal information during the transaction.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>31</td>
<td>I trust that if I lose my mobile phone, I will not lose my money</td>
<td></td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

32. Does mobile money services provide you with the necessary security?

   YES

   NO

33. IF YES, Please state the reasons

-----------------------------------------------------------------------------------------------------------------
-----------------------------------------------------------------------------------------------------------------
-----------------------------------------------------------------------------------------------------------------
34. If No, Please state reasons

---

Section E: Challenges with Mobile Money

35. Are you deterred from using Mobile Money services because of the associated costs?
   a. YES [ ]
   b. NO [ ]

36. If YES, to the above question. Please indicate to which extent you agree with the following statements. (1= Strongly Disagree, 2=Disagree, 3=Neutral, 4=Agree, 5=Strongly Agree).

<table>
<thead>
<tr>
<th>Challenges</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Neutral</th>
<th>Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>37 Using mobile money for my transactions is expensive.</td>
<td></td>
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<tr>
<td>38 Mobile money wastes time and cost.</td>
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<tr>
<td>39 Mobile money registration is cumbersome</td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>40 Replacement of SIM Card is difficult</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>41 Cost of using Mobile Money services is prohibitive compared to other E-Banking Services</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Others, please specify

a. 

b. 

c. 

d. 

e. 

42. What challenges do you face with the use of mobile money services? Please tick all that applies. (1 = Strongly Disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, 5 = Strongly Agree).

<table>
<thead>
<tr>
<th>Challenges</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Neutral</th>
<th>Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>43 The registration process is difficult</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>44 Mobile money fraud</td>
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<tr>
<td>45 Cost of using the service</td>
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<tr>
<td>46 Unstable systems</td>
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<tr>
<td>47 Poor customer service from agents</td>
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<td></td>
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<tr>
<td>48 Agent charges and commissions</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>49 Bank Charges</td>
<td></td>
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<td></td>
<td></td>
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<tr>
<td>50 The amount of money you can conveniently cash out from a merchant</td>
<td></td>
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<tr>
<td>51 The availability of a merchant close enough to your location at any point in time</td>
<td></td>
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<tr>
<td>52 Forgetting your PIN</td>
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<tr>
<td>53 Knowing how to use the menu</td>
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</tr>
</tbody>
</table>
Others, Please specify
........................................................................................................................................
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Section F: Recommendation of Mobile Money Services

54. What are some of the ways to improve mobile money services? Please state below
   a. ........................................................................................................................................
   b. ........................................................................................................................................
   c. ........................................................................................................................................
   d. ........................................................................................................................................
   e. ........................................................................................................................................

55. What are your views about the future of mobile money services in Ghana?
   a. ........................................................................................................................................
   b. ........................................................................................................................................
   c. ........................................................................................................................................
   d. ........................................................................................................................................
   e. ........................................................................................................................................

Thank You
Appendix B

Communications with Fidelity Bank Ghana Limited to seek Permission for the Study

Welcome Lawrence.

--

Thanks a lot and Best Regards

Prince Osei Hyeaman-Addai

Channel Products_Mobile Banking (APP & USSD), Mobile Money Business, Y’ello Save Account, Retail Internet Banking and SMS Alerts

E-Banking Sales Department

O: +233 302 214490

C: +233 209 532599 or +233 246-339-314 or +233 544-330-941

E: phyeamanaddai@myfidelitybank.net

Fidelity Bank Ghana Limited

3rd Floor, Fidelity Head Office, Ridge Towers,

Ridge-Accra

PMB 43, Cantonments - Accra

FIDELITY BANK
Dear Prince,

Good morning and thanks for the discussion.

I am very grateful for your immense support.

Thanks

Kind Regards
Lawrence Akosen
Senior Manager, Customer Planning And Enablement | Cell: +233244301087 | Email: Lawrence.Akosen@mtn.com
Hello Prince,

Good morning. Please confirm the best time to call for a discussion.

Thanks and standing pls

From: Prince Osei Hyeaman-Addai [mailto:phyeamanaddai@myfidelitybank.net]
Sent: Sunday, March 18, 2018 6:29 AM
To: Lawrence Akosen [ MTN Ghana ] <Lawrence.Akosen@mtn.com>
Cc: Dr William Derban <wderban@myfidelitybank.net>; Godwin Tamakloe [ MTN Ghana ]<Godwin.Tamakloe@mtn.com>
Subject: Re: Need your Assistance

Hi Lawrence,
Please let’s talk tomorrow for the support required.

Prince Osei Hyeaman-Addai
Channel Products: Mobile Banking (APP & USSD), Mobile Money, Y’ello Save, Personal Internet Banking and SMS Alerts.

M: +233 (0) 209532599 or +233 (0) 246339314
S: hyeaman1
E: phyeamanaddai@myfidelitybank.net
W: +233 (0) 246339314

Fidelity Bank Ghana Limited
Ridge Towers Office
Ridge, PMB 43
Cantonments – Accra
www.fidelitybank.com.gh

-------- Original message --------
From: Dr William Derban <wderban@myfidelitybank.net>
Date: 17/03/2018 07:12 (GMT+00:00)
To: Prince Osei Hyeaman-Addai <phyeamanaddai@myfidelitybank.net>
Subject: Fwd: Need your Assistance

Pls let’s support.
Begin forwarded message:

From: “Lawrence Akosen [ MTN Ghana ]” <Lawrence.Akosen@mtn.com>
Date: 16 March 2018 at 5:40:25 PM GMT
To: Dr William Derban <wderban@myfidelitybank.net>
Cc: “Godwin Tamakloe [ MTN Ghana ]” <Godwin.Tamakloe@mtn.com>
Subject: RE: Need your Assistance

Dear Dr. Derban,

Good evening. As a follow up to the below mail. Kindly find attached the interview questions for your kind review.

Thank you

Kind Regards

Lawrence Akosen
Senior Manager, Customer Planning And Enablement | Cell: +233244301087 |
Good evening Dr Derban,

Thanks for the favorable response from you. I am currently doing my MPhil at the University of Ghana. I am working on “Assessing the mobile money services of commercial banks in Ghana: case study of Fidelity Bank and GCB Bank”. I am currently at the stage of secondary collecting data from customers and the staff of the e-banking Dept’s. I will appreciate your support to gather information from your staff. I will share a copy of the semi-structure interview for your review and feedback prior to the engagement.

Thank you once again.

Sent from my iPhone

On 5 Mar 2018, at 2:41 PM, Godwin Tamakloe [MTN Ghana] <Godwin.Tamakloe@mtn.com> wrote:

Thank you.

Most appreciated.

Regards

Godwin

Kind Regards
Godwin Tamakloe
Hi Godwin,

No worries at all. Lawrence, please let me know what you are working on and let's see how we can help.

---

Dr. William Derban
Director, Strategic Partnerships & E-Banking
Retail Banking Unit

T: +233 (0) 501296335
S: william.derban
E: werban@myfidelitybank.net

Fidelity Bank Ghana Limited
Ridge Towers Office
Ridge, PMB 43
Cantonments - Accra
www.fidelitybank.com.gh

Learn more about our Inclusive banking service through the video below:
http://www.youtube.com/watch?v=zQ3CCZhTENM&authuser=0
Hello Dr.
Hope this mail finds you well.
Kindly permit me to introduce to you one of my very good friends who need some help with his academic work from your organization. Mr. Lawrence Akosen (on copy) is the MTN Senior Manager in charge of Customer Planning and Enablement is currently working on his Thesis and will need your help as indicated earlier.

He will be getting in touch via mail to give your details as to what he needs.

I will appreciate your support in this regards.

Thank you very much.

R

Godwin Kwami Tamakloe
SNR. MGR. AML, Compliance & Analytics - Mobile Financial Services | Cell: +233244301163 | Email: Godwin.Tamakloe@mtn.com

Kind Regards
Godwin Tamakloe
Senior Manager, AML Complaince and Analytics | Cell: | Email: Godwin.Tamakloe@mtn.com

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Appendix C

Communications with GCB Limited to seek Permission for the Study

COMMUNICATIONS WITH GCB LIMITED

From: Juliet Onny [Head Office - Corporate Banking]
To: Lawrence Akosen [MTN Ghana]
Cc: [Redacted]
Subject: RE: GCB Case Study Discussion

Date: 4/11/2018, 11:13:50 AM

Hello Lawrence,

Good to hear from you again. I hope my submissions will help with your research.

Thank you also for your offer to assist us with our mobile money drive. I will send you updates periodically and where necessary seek your assistance to ensure we mutually benefit from the MOMO space.

Regards,

Juliet Onny

GCB Bank Limited
Corporate Banking Department
P.O.Box 134, Accra, Ghana
Head Office
9th Floor
Office: +233-302-873859-05
Fax: +233-302-872106
Cell: +233-20-8170219
www.gcbank.com.gh

COMMUNICATIONS WITH GCB LIMITED

From: Juliet Onny [Head Office - Corporate Banking]
To: Lawrence Akosen [MTN Ghana]
Cc: [Redacted]
Subject: RE: GCB Case Study Discussion

Date: 4/11/2018, 11:13:50 AM

Lawrence Akosen
Senior Manager, Customer Planning And Enablement | Cell: +233244301087 | Email: Lawrence.Akosen@mtn.com

Re: GCB Case Study Discussion

Date: 4/11/2018, 11:13:50 AM

Dear Juliet,

As discussed, this is to introduce Lawrence my colleague. He will link up with you for any assistance you can offer.

Thank you

End Regards

Abdul-Majeed Rufai
Manager MFS Corporate Business Development | Cell: +233244301039 | Email: Abdul-Majeed.Rufai@mtn.com

This email is confidential. If you have received it in error, you are on notice of its status. Please notify us immediately by reply email and then delete this message from your system. Please do not copy it or use it for any purpose, or disclose its contents to any other person as to do so could be a breach of confidentiality. Thank you for your cooperation.
Good evening Juliet,

I am currently doing my MPhil at the University of Ghana. I am working on "Assessing the mobile money services of commercial banks in Ghana: case study of Fidelity Bank and GCB Bank". I am currently at the stage of secondary collecting data from customers and the staff of the e-banking Dept's. I will appreciate your support to gather information from your staff. I will share a copy of the semi-structure interview for your review and feedback prior to the engagement.

I am adding a copy of the interview details for your review.

Below is a link to the survey:

https://www.surveymonkey.com/r/thanks

Thank you once again.

---

"This email is confidential. If you have received it in error, you are on notice of its status. Please notify us immediately by reply email and then delete this message from your system. Please do not copy it or use it any purpose, or disclose its contents to any other person as to do so could be a breach of confidentiality. Thank you for your co-operation."

_________ Original Appointment ________

From: Lawrence Akoession [MTN Ghana]
Sent: Tuesday, April 3, 2018 5:31 PM
To: Juliet Olony [Head Office - Corporate Banking]
Subject: GCB Case Study Discussion
When: Monday, April 9, 2018 10:00 AM-11:00 AM (UTC) Monrovia, Reykjavik.
Where: Your office

Dear Juliet,

Good evening. Per discussion, please find the calendar request for your information.