

**KWAME NKRUMAH UNIVERSITY OF SCIENCE AND TECHNOLOGY, KUMASI,
GHANA**

**A STUDY ON MOBILE MONEY AND RETAIL BANKING SERVICES IN KUMASI
METROPOLIS**

By

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**A thesis submitted to the Department of Economics, College of Humanities and Social
Sciences, in partial fulfilment of the requirement for the award of**

MASTER OF SCIENCE IN ECONOMICS

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DECLARATION

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

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DEDICATION

This work is dedicated to my dear wife and lovely children.

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During the period of this study I obtained a good deal of advice, guidance and coaching from individuals, books and publication I would like to acknowledge in this text.

I am grateful to God Almighty for the wisdom, knowledge, good health and provision to write this thesis successfully. I also take this opportunity to appreciate my mentor, coach and supervisor, Dr. Yusif Hadrat who advised, encouraged and criticized me constructively to bring this study into shape. Acknowledgement is also given to all the lecturers of the Department of Economics for their guidance and support.

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ABSTRACT

The study makes an analysis of mobile money and retail banking services in Kumasi Metropolis using a sample of 130 respondents. In order to conveniently interpret the data, the results are presented in tables and charts. A number of key findings emerged from the field survey where the study shows that the retail banking in Kumasi faces peculiar challenges in service quality, distribution, and cost. However, the challenges and perceptions of the retail banking in the lives of mobile money account users allow the adoption of mobile money services to thrive among the lower-income users. Based on the findings of the study, it was noted that the increasing use of mobile money services among the low earning income category is highly associated with decreases in retail bank users in a way that this tends to pose threat to the growth of retail banking. It is however recommended that banks should consider the possibility of Collaboration Model to involve mobile network operators in the mobile payments value chain that are user friendly and develop them so as to enable deposit/withdraw of money using mobile phone which will meet different customer requirements and capture market niches that expands on market share leading to improved financial performance.

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CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

Retail banking entails services that commercial banks to offer strictly to individual customers. The term also applies to a section of the bank that has direct dealings with the customers. Some of the services offered by retails include; personal loans, transactional accounts, savings, mortgages, credit and debit cards (Wikipedia, 2016). Increasingly, the extent of mobile money services is undoubtedly revolutionising retail banking in Africa without exempting Ghana. The option of mobile money service has caught up so fast that it has presented an alternative financial service to many Africans to use mobile phone as a platform for payment and receipt of a form of currency termed “Mobile Money”.

A cursory study of the introduction of mobile money in Africa revealed that the idea of mobile money started in 2002 when the institute of International Development-UK funded research found citizens of Botswana, Uganda, and Ghana were of their own accord using airtime as a substitute for money transfer. Following this, in 2004 M-Cel in Mozambique introduced the first authorized airtime unit trade off which was an antecedent towards M-Pesa. The idea was further developed through a series of piloting to implement changes to the initial design. Later in April 2007, students developed soft wares during their project in Kenya (Appiah-Danquah, 2014), Vodacom and Safaricom, mobile network operators (MNO) were not considered and given the mandate to take deposits. Banks established new mobile phone transfers and money payment systems, known as M-Pesa (M for mobile, pesa is Swahili for money) (Mengich et al., 2014).

M-Pesa was successful in Kenya and several telecoms in Africa started adopting this into their services (Appiah-Danquah, 2014). Mobile Telecommunication Network (MTN), Ghana's leading telecommunications provider, was the first to partner nine to launch mobile money services in Ghana. Subscribers of MTN after the launch could undertake transactions using their mobile phones. Subscribers accessed the service without necessarily opening a bank account (Oluniyi, 2009). Mobile money service is utilised for various reasons by Ghanaians to send and receive money from friends and loved ones, payment of fees, remittances, and payment of merchants to aid critical business processes (Kofigah, 2010).

The benefits of mobile money include convenient savings, ease of use, bringing the unbanked into a virtual banking, transformation of the economy among others (Mengich et al., 2010). This revolution is gradually transforming and upgrading the use of mobile phones from ordinary making and receiving calls, substituting for travelling efforts, allowing quicker and easier access to information. In most developing countries, the number of bank account owners is fewer than the number of mobile phone owners (Nandhi, 2012). In Ghana, while bulks of Ghanaians have no access to a bank account or formal financial service because mobile money offers new possibilities for making financial services more inclusive in Africa (United Nations, 2012).

Unlike conventional banking and financial services, mobile money also offers the possibilities to make deposit, withdrawal and to transfer money at a low cost compared to the traditional banking system where some transactions would be done within the premises of the bank where people get stuck in queues. The economy is practically moving away from a cash economy to a cashless electronic money system. Money transfers institutions and Banks are facing fierce

competition from Airtel Money, MTN Mobile Money, Tigo Cash (Sakyi, 2014) and now Vodafon Cash. In all, there are four Mobile Network Operators (MNOs) in Ghana offering mobile money services. As a result, there was a need to make a comparison study between retail banking and retail banking.

1.2 Statement of Problem

Using your handset to receive and send money is described as mobile money services (Mauree, 2013). In Ghana, savings and loan companies, rural banks and commercial banks are mandated to offer financial services for people living in urban and rural environments (Boakye-Yiadom, 2009). To revolutionize the financial services of the country to address the needs of individuals and small businesses, Mobile Network Operators (MNOs) have made investments to create networks that reach further and deeper into rural areas (United Nations, 2012). These networks provide mobile money service to many Ghanaians. In 2014, the telecommunications giant, Mobile Telecommunication Network (MTN) Ghana witnessed an unprecedented growth of its subscribers to 5million. According to, Kunateh (2014) the growth of mobile money facilities serve as a threat to microfinance institutions in Sub-Saharan Africa. People prefer financial services that are reliable, convenient and affordable (Kamukama & Tumwine, 2012). MMS has created unmatched competition between the Banks and Mobile Network Operators. According to Sturmius (2012), MMS growth is gradually taking many customers away from the banking hall and has significantly affected retail banking which has further affected liquidity.

In the review of literature, it was found that no attempt was made to make analysis of mobile money and retail banking service in Kumasi hence a knowledge gap and this thesis proposes to bridge this gap.

1.3 Objectives of the study

The study makes an analysis of mobile money and retail banking services in Kumasi Metropolis.

The specific objectives include the following;

1. To examine users preferences of mobile money services and retail banking services in Kumasi Metropolis;
2. To assess the accessibility of mobile money and retail banking services in Kumasi metropolis;
3. To find out the challenges of retail banking in Kumasi Metropolis.

1.4 Research Questions

The following unanswered questions motivated the study;

1. Do users prefer mobile money services to retail banking services in Kumasi Metropolis?
2. Is mobile money service more accessible to retail banking in Kumasi Metropolis?
3. What are the challenges of retail banking in Kumasi Metropolis?

1.5 Significance of the Study

Since Money, in any form, remains the set of asset in an economy used regularly by people as a medium of exchange, this study will be a significant endeavour in establishing a statistical relationship between the usage of mobile money services and retail banking by people living within Kumasi metropolis to carry out their financial transactions and satisfy their financial

needs. The study findings will be useful in contributing to the pool of knowledge on retail banking and MMS.

1.6 Scope of the Study

The study focuses on mobile money services within Kumasi metropolis. The population of study was categorized into four: Bank account holders who are not mobile money subscribers, Mobile money subscribers who are not bank account holders, Bank account holders who seldomly use mobile money services, and Mobile money subscribers who seldomly use bank accounts. For the purpose of this research, the focus is on determining the fraction of mobile money services in the Kumasi metropolis that use mobile money service to carry out their financial transactions. This category of people use mobile money services to carry out their businesses and financial transactions and the impact of the mobile money services on retail banking within the Kumasi metropolis.

1.7 Organisation of Study

The thesis is prepared in five chapters. Chapter One is the introduction and consist of the background of the study, objectives of the study, statement of the problem, hypothesis of the study, significance of the study, scope of the study (limitation/delimitations), and organisation of the work. Chapter Two reviews theoretical and empirical literature relevant to the study. The chapter opens with an introduction and discussion of the research process and concludes with the summary of what previous researchers have said and how they relate to the subject of this study. Chapter Three presents the research methodology for the study. The presentation and analysis of data collected for the study are also discussed in Chapter Four. Chapter Five is the summary and conclusions which summarizes the entire study, giving recommendations to set a platform for

further study to be conducted on the subject. The chapter concludes with list of references and appendices used in the entire study.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

The literature review is intended to deliver a summary of sources that have been reconnoitred while reading on the subject of mobile money services and retail banking in Ghana to demonstrate how the current study fits within a larger field of study about mobile money services and retail banking. It opens with an introduction and discussion of the search process, and reviews both theoretical and empirical literature relevant to the study. The chapter concludes with how the literature review relates to the current study.

2.2 Review of Theoretical Literature

This section considers various theoretical issues that can be analysed about mobile money services and retail banking. It narrows the discussion to the impact of mobile money services on retail banking.

2.2.1 Money

Money has been with human for several centuries and a significant subject debated in economics. It is an intermediate through which financial dealings are facilitated (Kofigah, 2010). Rao (2014) in his study observed that, money is transforming its physical form to invisible form over a period of time taking different material, shape and form right from its existence. He concluded that this transformative nature of money has therefore made it very difficult to define money right from olden days as people are using different things at different times as money. Tcherneva (2005) explained this further by confirming that scholars have since asked the

question ‘What is Money’? According to (Handa, 2009), money is the functions it performs. Andolfatto (2009) describes money as a store of value, unit of account, means of deferred payment, medium of exchange or anything that is accepted in payment for goods and services. Money can either take the form of bank drafts, coins, cheques, paper currency, money orders and many more (Kofigah, 2010). The basic form of money is M1, which consists currency, demand deposits, and checklike deposits (Slavin, 1999).

2.2.2 Banking Systems in Ghana

In a broad sense, banking means to safeguard, lend or make loans and transfer funds, exchange of money, and guaranteeing credit-worthiness (Amponsah, Darkwah, & Sebil, 2006). The banking system in Ghana consists of different types of banks which provide various services to the government and the public at large. The institution of banking is grouped into various forms according to their ownership, functions, domicile, product and services, status, domicile and the clientele served (Jamal, 2015). Functionally, the banking system in Ghana can be classified into central bank, commercial banks, investment banks, development banks, credit unions, savings and loans.

The central bank whose entire capital stock is owned by the state and its role is developing various payment systems, especially the non-cash payment systems which include electronic payments such as mobile payment system and card payment system (Kofigah, 2010; Nicholas, 2012). Commercial banks also facilitate payment and other retail activities (Kofigah, 2010). The banks have the mandate to help in business development in the country by bridging the gap between surplus and deficit units.

In otherwords, commercial banks deal with loans and deposits from individuals, corporations, institutions or businesses (Dodoo, 2007). Banks in Ghana play the role of collecting savings and facilitating retail activities. The largest commercial bank in Ghana is the Ghana Commercial Bank (GCB) and its function includes advancing loans, making payment against cheques, discounting bills of exchange and overdrafts, transferring of money, issuing letters of credit (Zahir, 2012).

Banks that undertake the activity of buying and selling shares in Ghana are known as investment banks. Their primary role is to help government and joint stock companies mobilize money through the sale of bonds and shares. They can also receive deposits and give them out in the form of loans (Jamal, 2015). An example of investment bank in Ghana is Databank.

The development banks as one of the main banks is a financial institution established to provide long-term finance for developing a certain sector of the economy (Nicholas, 2012). Development banks are in three kinds; Industrial Bank, Agricultural Bank, Mortgage Bank (Zahir, 2012). Agriculture Development Bank (ADB) and Housing and Finance Co-operation (HFC) are examples of development banks in Ghana.

Credit unions provide services and products identical to most commercial and retail banks (Pritchard, 2015). Savings and Loans are created to initiate savings habit among people and offer loans to petty traders on medium and short-term basis (Jamal, 2015). These banks may be described as Private Bank, Public Bank, Nationalized Bank, Partnership Bank, Chartered Bank, Cooperative Bank based on their ownerships (Zahir, 2012).

2.2.3 Current Innovation in Banking

Introduction of new ideas, methods or devices have always been a hallmark of the financial services industry. Financial innovations are most easily explained as induced by either market or regulatory factors (Sigma One Corporation, 2000). Innovations in technology in Ghana have established new channels of delivering banking services and products, which has replaced the outmoded methods. Important technology driven retail product innovations and delivery technologies such as mobile banking, internet banking, Automated Teller Machine (ATM), Point-of-Sale Debit Cards, Home banking, Pre-authorized debits/credit and Paying bills by phone (Domeher, Frimpong, & Appiah, 2014; Sigma One Corporation, 2000). These innovations are considered cost efficient, convenient and increased penetration of banks (PricewaterhouseCoopers (Ghana) Ltd, 2014). The evolution of IT — particularly the internet and mobile devices — has resulted in the gradual disintegration of the banking sector (Egan, 2014).

The latest innovation in the banking industry is the branchless banking, commonly known as “mobile money,” (Mas & Radcliffe, 2010). This great innovation was the result of three factors; the motivation to enhance financial inclusion; to ensure to lower risk and cost of retail and trade based on cash transactions; introduction of a cashless economy (Bhan, 2014).

Accounting to the mobile money revolution in Africa, the Financial Conduct Authority (2014) in a report exposedly pointed out that this development is partly due to the fact that the way people do everyday banking and make payments is changing. This notwithstanding, Monitise (2012)

also reported that this shift in consumer mindset and growing demand for anytime, anywhere access to financial service is the cause of the rising up of the new kind of competitor, Mobile Money Service suggested by Mas & Radcliffe (2010). Consequently, the Financial Conduct Authority (2014) believed that Mobile Network Operators are delivering innovation to enable everyday financial services and payments to be made through mobile devices.

According to Mas & Radcliffe (2010), financial exclusion is a fundamental problem when developing products and services to meet the needs of the poor. This innovation as observed by Mauree (2013) has given millions of people exclusion from the official financial stream to attain financial inclusion securely, cheaply, and reliably. Allegedly, banks are being left behind as Mobile Network Operators capitalise on the consumer's interest to deepen their customer engagement and create more connected end-user experience (Monitise, 2012). To keep their competitive pace, retail banks however undergo a digital conversion as advancements in technology continue to transform the lives of banking customers who want to accomplish daily activities of banking at anytime and anywhere (Capgemini, 2013).

2.2.4 The Concept of Mobile Money

Today, Diniz et al., (2011) describe mobile money using digital characteristics, which gives it name mobile money. They said mobile money can be conceptualised by looking at the concept of money. This is however an evidence of the fact that money has evolved over time.

Throughout its transformative stages, other objects were used as intermediate of exchange such as a metal coin, shell, or historic image, but its value has nothing to do with the physical

appearance (Beattie, 2016). But in complete contrast, money today has acquired intangible properties, such as mobile money (an electronic money) (Rao, 2014) which has become an alternative medium of exchange, where cell phone minutes take on the role of currency (Subramaniam, 2013). Mobile money has been therefore defined to describe storing money and making transaction using the mobile phone, where value is stored in an “m-wallet” (Babcock, n.d.).

2.2.5 Mobile Banking Service (MBS)

The term mobile banking service (m-banking) is used to describe the range of financial services that are offered via the mobile platform including mobile money transfer. This allows customers to conduct some financial transactions remotely using a mobile device such as a mobile phone (Wikipedia, 2016; investopedia, 2016; Mauree, 2013). Conversely, Morawczynski (2011) opined that a variety of other terms is used in literature to describe mobile banking services which include m-payments, m-transactions, and mobile financial services.

2.2.6 Mobile Money Transfer (MMT)

Mauree (2013) said mobile money transfer allows sending and receiving money. In this case, electronic money can be transferred either domestically or internationally. When recounting the historical overview of mobile money transfer in Africa, Subramaniam (2013) said until 2006, countries in Africa traditionally relied on informal means of money transfer such as friends, family and bus drivers, the most commonly used formal transfer system was post offices, while private institutions like Western Union, although expensive, were also being used. Relying on these systems for transfers and payments raises obvious safety concerns – the risk of theft and

loss of money being the most important of problems. Hence, many countries in Africa lacked a money transfer or payment system that was cheap, quick and safe.

Merritt (2010) was however quick to sign in that the key characteristic of mobile money transfer services is the fact that they relate to private transactions only which involves transfers of money from one person to another. On this note, it can be concluded that mobile money transfer addresses person-to-person (P2P) money transfers (Mauree, 2013). In Ghana, Airtel Money, MTN Money, Tigo Cash and Vodafon Cash provide money transfer services via a system of agents or partners (2013).

2.2.7 Access to Finance and Financial Inclusion in Africa

Scharwatt et al., (2014) suggested that in developing countries, a large number of people are ‘unbanked’ and have to rely on cash or informal financial services which are typically unsafe, inconvenient and expensive. Demirgüç-Kunt, Beck, & Honohan (2008) emphasized the importance of having a system that allows access to finance in their assertion. According to Merritt (2010), countries are been dominated by banks whose primary function in the most basic sense is to gather deposits for deployment in loans and other permissible investments. In developing an economy that ensures financial inclusion, Stein (2013) said in a report by the International Finance Corporation that the availability of finance is key to unlocking Africa’s great growth potential.

Scharwat et al., 2014) argued that the availability of finance is viewed by the Consultative Group to Assist the Poor, as the availability of financial services to individuals or enterprises, typically,

four aspects of access to finance can be identified to include; microfinance, informal finance, mobile banking, and finance for small and medium enterprises (SMEs). Addressing mobile banking strategy for financial inclusion, Mauree (2013) identified four key solutions which included mobile retail banking, mobile cheque deposits, mobile peer to peer payments, and mobile money transfers. In a related instance, The Global Financial Inclusion (Global Findex) database, established by the World Bank in 2011, gives a comparable indicator that shows the borrowing, savings, payments, and risk management abilities of people. In 2014, the database showed that 62% of adults have accounts at a bank or mobile money provider or with another type of financial institution (Demirguc-Kunt et al., 2015).

2.2.8 Mobile Money Adoption in Africa

The Boston Consulting Group (2016) revealed that, the market for banking in sub-Saharan Africa has developed slowly, noticing that the majority of people in sub-Saharan Africa are still unbanked, with very limited experience in formal financial institutions. Because of their lack of experience with traditional banks, many African consumers feel more comfortable with informal financial services. This is making mobile financial services, often called mobile money; continue to attract more interest from the developing countries than from developed countries (Muya, 2015). Adding to this, Mauree (2013) asserts that mobile money adoption is lower in more developed countries, where most people have bank accounts.

This adoption in Africa's emerging economy is being used strategically to enable people without bank accounts to carry out financial transactions. Interestingly, Bhan (2014) observed that while U.S. consumers are being introduced to Apple Pay, mobile money services like M-Pesa and

MTN Money have been flourishing in African markets as more people have mobile money accounts than bank accounts in at least nine African countries. According to Iruobe (2014) and (Domeher et al., 2014) mobile money has proven to be an eminent driver of financial inclusion in Africa as it extends access to payments and financial services beyond the reach of traditional financial institutions.

Bilodeau et al. (2011) said even though the use of the mobile platform to deliver financial services is a relatively new phenomenon in Africa, according to Muya (2015) mobile money services has emerged to bear particular relevance to Africa, in its simple form, as it allows consumers and a large population of unbanked mobile phone users, who are otherwise excluded from the formal financial system, to use their mobile phone as a virtual wallet, storing 'cash' which they can either spend with retailers, pay service providers, transfer to peers, or exchange for physical cash with a participating agent.

Caulderwood (2015) in her submission acknowledged that lack of access to formal banking systems is a major problem for developing countries, which badly need these services to encourage job creation and economic growth. Mohammed (2015) simply concludes by saying that mobile money is now big business in Africa. Since the launch of SMART Money in the Philippines in 2003, at least 72 mobile money deployments have been launched across 42 developing countries. For instance, there are more mobile money accounts than bank accounts in countries such as Kenya, Madagascar, Tanzania and Uganda. According to Caulderwood (2015), South Africa was the first to launch a mobile money service in 2004, but Kenya began to lead the way in 2007.

Today, Statistically, BBVA Innovation Center (2015) provides that Kenya leads the way, with mobile money account ownership at 58%, while Tanzania and Uganda have rates of close to 35%. Kendall et al. (2014) emphasise that in these countries lack of mobile technology is not the major obstacle to increasing mobile-money penetration. Collectively, Kenya is regarded as a household name as far as mobile money is concerned but the success of mobile money in Africa transcends Kenya (Iruobe, 2014).

A critical analysis of the emergence of mobile money in Ghana by Boadu & Abenaa (n.d.) shows that unlike other countries in Africa, mobile money is a relatively new phenomenon and it operates in partnership with certain selected banks to facilitate money transfer for the Ghanaian market. The service is available to both mobile and non-mobile users. Statistics show that a high percentage of Ghana's population are "unbanked" meaning they conduct their transactions outside the banking sector.

2.3 Empirical Literature Review

It is obvious that there are empirical implications of mobile money services. Mobile money services is not a mere theory. It is a practical and an important tool to enable everyday financial services and payments to be made through mobile devices. This section, however, considers various empirical issues that can be analysed about the subject of mobile money services and retail banking.

2.3.1 Perceptions of Mobile Money Users in Africa

Ky & Rugemintwari (2015) investigated the mechanisms underlying savings behaviour of mobile money users and non-users. They found out that there are perceptions that mobile money

is secure and safe for deposits and easy transfer of funds and hence people prefer mobile money platform to banks. The study of Wahiduzzaman, Sharmin, & Jaman (2014) examined consumers' perception to mobile money transfer services in Bangladesh. The study was limited to only 50 respondents and the results also represent only the values and perception of those 50 people only. The population of the study was made up of only users of mobile money transfer service. survey questionnaires which centered on the perception of mobile money transfer services was used in gathering information among the respondents. The main important parts of the study was concentrated on Price, Distribution and Quality related. However the study revealed that the mobile money users perceived that, on service quality, the mobile money transfer is easy to use, opening personal account is easy, mobile money transfer is reliable and mobile money transfer agents are consistently courteous. From the survey data analysis, reseachers observed that mobile money transfer users strongly agreed that mobile money transfer services takes short processing time, it is possible to send and receive money from different locations and they can go to a service center near to them for information on any problem. Some users can even transfer money on their own. This work improves upon the sample size employed and makes a comparative analysis between retail banking and mobile money service.

International Finance Corporation (2011) also reported on a study of non-user and user observations and the kinds of demand stated for m-money. It was stated in the report that to appreciate user behaviour and their observations, the demographics characteristics of m-money non-users and users in 4-countries were compared. Using the United States as a reference, the study revealed that about 94 percent of Nigerians and 62 percent of users in Thailand agree that mobile is cheaper compared to the traditional banking services.

A study by Nandi (2015) reported that individual perceptions had a positive impact on mobile banking on low income households in India. Also, non-subscribers recorded a negative relationship regarding their saving capacity and their incomes and as well their deficiency when it comes to the awareness and the advantages of mobile money. The absence of awareness raised makes it necessary for strategic creativity to reach out to the poor to improve financial inclusion.

2.3.2 Economic Impact of Mobile Money on Formal Savings

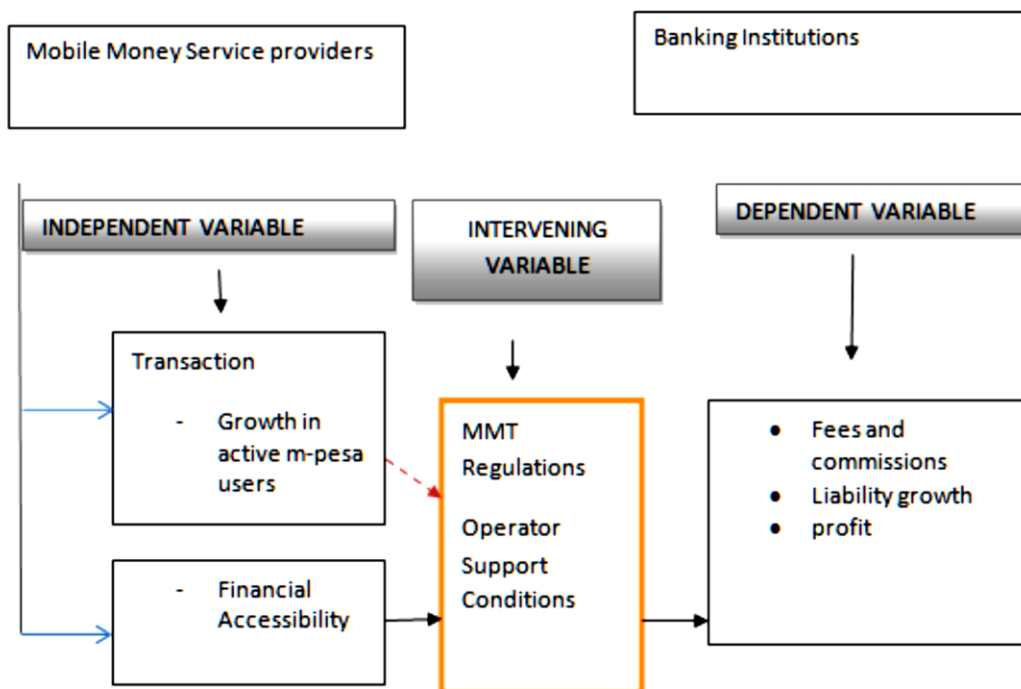
Mobile money transaction has had a significant impact on formal savings and money storage practices. Ngaruiya, Bosire, & Kamau (2014) established the impact of mobile money activities on the financial performance of SMEs, their study found out that the inception of mobile money transaction has made money transfer to be available at a low cost compared to the traditional banking system where some transactions would be done within the premises of the bank. The study employed descriptive research design.

Ky & Rugemintwari (2015) also investigated how individuals can use mobile money services to mobilize savings against unforeseen circumstances such as health hazards. They employed the use of a logistic model together with data collected from the field in Burkina Faso. Findings from the study reported that using MMS did not significantly affect the savings behaviour of people. It was also revealed that using MMS only served some form of protection to vulnerables such as females, rural dwellers, uneducated and the poor in times of emergency. These findings were confirmed by Ky & Rugemintwari (2015) and Nandhi's (2012).

2.4 Conceptual Framework

Muisyo et al. (2014) used the concept below to explain the effects of MMS. The framework below explains the usage and explores the reasons why people prefer the use of MMS. According to Muisyo et al. (2014) the conceptual framework model adopted for this study, highlights that mobile money transfer service will influence some important pillars of bank operations due to reduced transactional costs, reduced time to complete transactions, increased financial accessibility, and increased efficiency of mobile money services.

Figure 2.1: Conceptual Framework



Source: Muisyo et al. 2014

2.5 Conclusion

The literature review informs the overwhelming extent at which mobile money service is undoubtedly revolutionising retail banking and financial access in Africa. The literature review reported both empirical and theoretical literature on the subject matter and reveals the agreement by most researchers to the acceptance and adoption of MMS. On the impact of mobile money services on the economy, literature reveals that MMS has encouraged formal savings and money storage practices. However, most of these works presents the contributing effect of MMS since its introduction but makes no mention of the effect on retail banking especially. This research seeks to bridge this gap.

CHAPTER THREE

METHODOLOGY

3.1 Introduction

The methodology employed in the study is presented in this chapter. This involves the research paradigm. It contains the research design, population and sampling techniques, tools for data collection and data collection procedure as well as data analysis plan, purpose of the study, population, sample and sampling procedure, data collection methods, data analysis, quality of research and research ethics.

3.2 Research Design

The study makes a comparative analysis of mobile money services and retail banking services from the context of HFC Bank, UT Bank and GT Bank in the Kumasi metropolis. According to De Vaus, (2001) and Trochim (2006), research design may be varied based on the research problem. According to Labaree (2009), a research begins with a plan to integrate the diverse machineries of the study in a logical and coherent way to ensure that the research problem is addressed.

The case study design was employed since it is a type of research study widely used in economics. In as much as not permitting statistical generalizations, it focuses on current concerns and further provides theoretical generalizations. In this type of study, the outcomes can be generalized for the effect of mobile money services on retail banking services.

3.3 Study Population

The study compares mobile money services to retail banking in selected banks within the Kumasi metropolis. The targeted retail banks include HFC Bank, UT Bank and GT Bank. The target population consist of all subscribers of mobile money and persons who hold account with these banks in the Kumasi Metropolis. The assumption is that, this target population has the same parameters to yield research data that can be generalized.

The criteria laid out in defining the population in this study included retail banking service providers and clients subscribed to mobile money services of Mobile Network Operators in Kumasi. Even though, banks and clients in Kumasi are a well-defined group who share one or more characteristics that can qualify them to be considered as a population, the population of banks and clients who would fit into the criteria that the researcher has laid out for the study include retail banking service providers and clients subscribed to MMS of Mobile Network Operators who live in Kumasi. The study drew a population of one hundred and thirty (130) respondents which included senior bank managers, accountants and clients.

3.4 Sample and Sampling Technique

The study selected a sample of 130 from the category of respondents of interest. Since it was typically impossible to examine each member of the entire population individually, sampling techniques were employed to choose a representative sample for the study. Purposive sampling technique is use to select Senior bank managers and accountants. Senior bank managers and accountants were carefully chosen on the basis of their convenience or by the purposive personal judgment of the researcher. Purposive sampling technique was used to select 130 respondents.

Purposive sampling targets a particular group of people since the researcher had a purpose in mind (Trochim W. M., 2006).

Clients, who are users of mobile-money facility of Mobile Network Operators and are also customers of these banks, to fill in the questionnaires were selected using convenient sampling. With convenience sampling, the clients were selected just because they are the easiest to recruit for the study. Convenience sampling was deemed appropriate because the study is basically quantitative.

Table 3.1: Sampling structure of respondents

Category	Sample	Sampling Technique
Senior Bank Managers	15	Purposive Sampling
Accountants	15	Purposive Sampling
Clients	100	Convenient Sampling
Total	130	
Researchers's		

3.5 Sources and Type of Data

This study used basically primary data purposively and conveniently collected from senior bank managers, Accountants and clients of the three banks who are subscribers of MMS of the Mobile Network Operators (MNOs) within the Kumasi metropolis.

3.6 Instrumentation and Data Collection Procedure

Mann (2003) said, although, many case studies are done using questionnaires. In economics, case studies typically involve the use of regression, in order to sort out the existence and magnitude of causal effects of one or more independent variables upon a dependent variable of interest at a given point in time (Vasudevan, 2015). In this study, based on Brenner & March's (1995), a triangulation of instruments was employed by the researcher as much of the data collected were based on questionnaire. The study gathered primary data through the administration of structured questionnaire to obtain other information which are not included in the annual reports. The study also necessitated looking into financial statements within the annual reports (2010-2015) of the sample banks.

3.7 Method of Data Analysis

The study measured and developed scales and pre-tested based on the underpinning theory. The 5-point Likert-type scale (1=strongly disagree to 5=strongly agree) is also applied. The data from the field was classified, edited and coded to make the analysis simple and easy to interpret. Finally, the data was analysed using descriptive statistics. The rationale for using descriptive statistics is to enable the researcher to summarize and organize data in an effective and meaningful way. The results are typically presented using statistics, tables and graphs and are designed to ensure that the outcome are well presented to allow for any generalization. One significant characteristic of quantitative methods is that the procedure of data gathering is different in analysis.

CHAPTER FOUR

PRESENTATION AND DISCUSSION OF RESULTS

4.1 Introduction

This chapter presents analyses and discussion of results of data collected for the study. The data were put together analytically as primary data. These data were analysed and interpreted accordingly. In order to conveniently interpret the data, the results are presented in tables and charts. Analysis of data in this study was descriptive. Responses from the respondents were described, analysed and inferences made. The chapter focuses on analysing the demographic characteristics of the respondents, trends in retail banking, some challenges of retail banking in Kumasi, effect of mobile money services on retail banking in Kumasi, and the effect of mobile money services on the profitability of banks.

4.2 Response to Questions

Out of the 130 questionnaires that were issued to the respondents, 126 questionnaires which represents 97% were returned, 2 questionnaires representing 1.5% were unanswered, while 2 which translate to 1.5% were not returned. The 97% of the returned questionnaire, representing more than half of the total respondents, are considered highly adequate for analysis. However, to build a foundation for a close analysis of the study, the researcher discusses in this part the results of data collected for the study.

4.3. Demographic Characteristics of Respondents

Mobile money use differs significantly by demographics. This section presents the demographic characteristics of respondents. The include; age, gender, employment status (ES) and earning per month (EPM).

4.3.1 Age Distribution of Respondents

The age categories of respondents are reported on Table 4.1. The age distribution of the respondents reported in Table 4.1 shows that 27% of the respondents are between the ages of 16-25 year, 25% are also between the ages of 26-35 years, 37% are between the ages of 36-45 years, 7% are between the ages of 46-55 years, and 4% are between the ages of 56-65 years. We can infer from Table 4.1 that, about 89% of the respondents are between the ages of 16 and 45years. This means that the youth demand mobile money and retail banking services than the aged. According to Nandhi's (2012), the youth adopt mobile money and retail banking services because they easily incline and adapt to these technologies.

Table 4.1: Age distribution of respondents

Variables	Frequency	Percentage	Cumulative Percentage
16-25	34	27	27
26-35	31	25	52
36-45	47	37	89
46-55	9	7	96
56-65	5	4	100
Total	126	100	
Mean 25.2			

Source: Field data, 2016

4.3.2 Gender Characteristics of respondents

The gender distribution of the sampled respondents is reported in Table 4.2. We can infer from Table 4.2 that most of the respondents who participated in the study were male representing 58% while 42% of the respondents were female, which means that the proportion of male users is slightly higher than that of female respondents that were sampled.

Table 4.1: Gender of respondents

Variables	Frequency	Percentage	Cumulative Percentage
Male	73	58	58
Female	53	42	100
Total	126	100	
Mean 57.5			

Source: Field data, 2016

4.3.3 Employment Status of Respondents

We can infer from Table 4.3 that, 13% of the respondents are categorically unemployed. However majority of the respondents (61%) are employed while 17% are self-employed. Only 9% of them are business owners.

Table 4.2: Employment Status of Respondents

Variables	Frequency	Percentage	Cumulative Percentage
Unemployed	16	13	13
Employee	77	61	74
Self employed	22	17	91
Business owner	11	9	100
Total	126	100	
Mean 31.5			

Source: Field data, 2016

4.3.4 Monthly Income of Respondents

From Table 4.4, 8% earn between zero and one hundred ($0 \leq 100$) Cedi a month, while 46% earn between one hundred and one Cedi and one thousand ($101 \leq 1000$) Cedi. Again, 36% of the respondents earned $1001 \leq 2000$ Ghana Cedis per month. 10% of the respondents were however found to earn more than two thousand ($2000 \leq$) Cedi per month.

Table 4.3: Earning Profile of Respondents

Variables	Frequency	Percentage	Cumulative Percentage
$0 \leq 100$	10	8	8
$101 \leq 1000$	58	46	54
$1001 \leq 2000$	45	36	90
$2000 \leq$	13	10	100
Total	126	100	
Mean 31.5			

Source: Field data, 2016

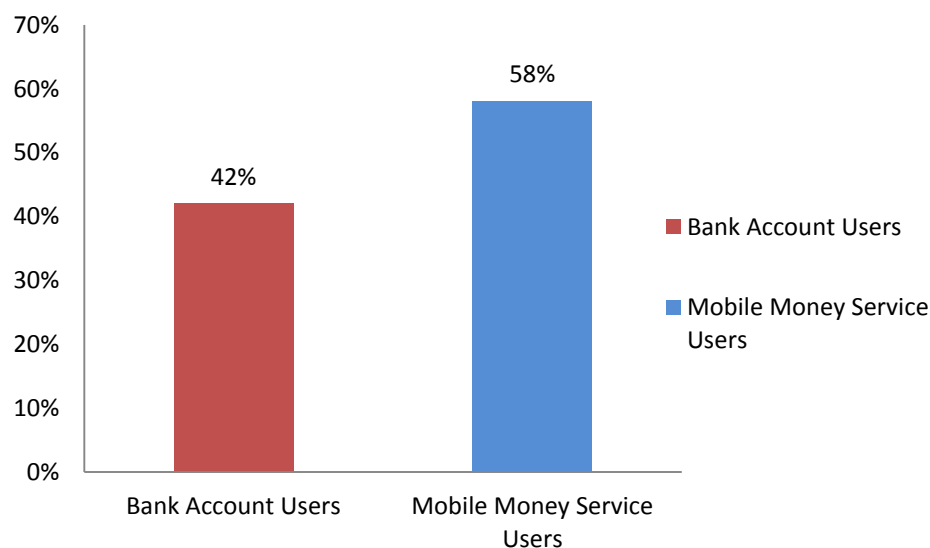
The study found out that both males and females have used mobile money services at the same time, however, had the highest number of respondents who use mobile money services are males (24%) between the ages 26-35, representing 36%. This does not differ from previous findings that people in the younger age group are more likely to use mobile money services than the older age (Yu, 2009). Most of these respondents are employees (33%) who earn $1001 \leq 2000$ per month. This suggests that young Ghanaians could easily handle and accept new technologies and applications. They are normally well educated and possess the knowledge to learn and master new technology quickly and easily. Their adventurous nature and curiosity about new things are the reasons for their interest in attempting new technology applications.

4.4 Users' Preferences of Mobile Money Services and Retail Banking Services

4.4.1 Respondents preferences of Mobile Money Services and Retail Banking

From Figure 4.1, 42% of the sample respondents were bank account users (BAU). However, 58% were Mobile Money Service Users (MMSU). This is an indication that respondents were more likely to subscribe to mobile money services than get a bank account. This is an indication that there is the gradual shift of customers' interest from the use of formal bank account to the use of mobile money service. The gradual migration of customers' interest is as the result of customers' perception about mobile money service such that mobile money service is perceived to be convenient and cheaper to use for savings and payments (Nandhi M. A., 2012). In effect, retail banks are denied of deposits can improve their liquidity in banks (Kamukama & Tumwine, 2012).

Figure 4.1: Mobile Money Users' vrs Bank Account Users

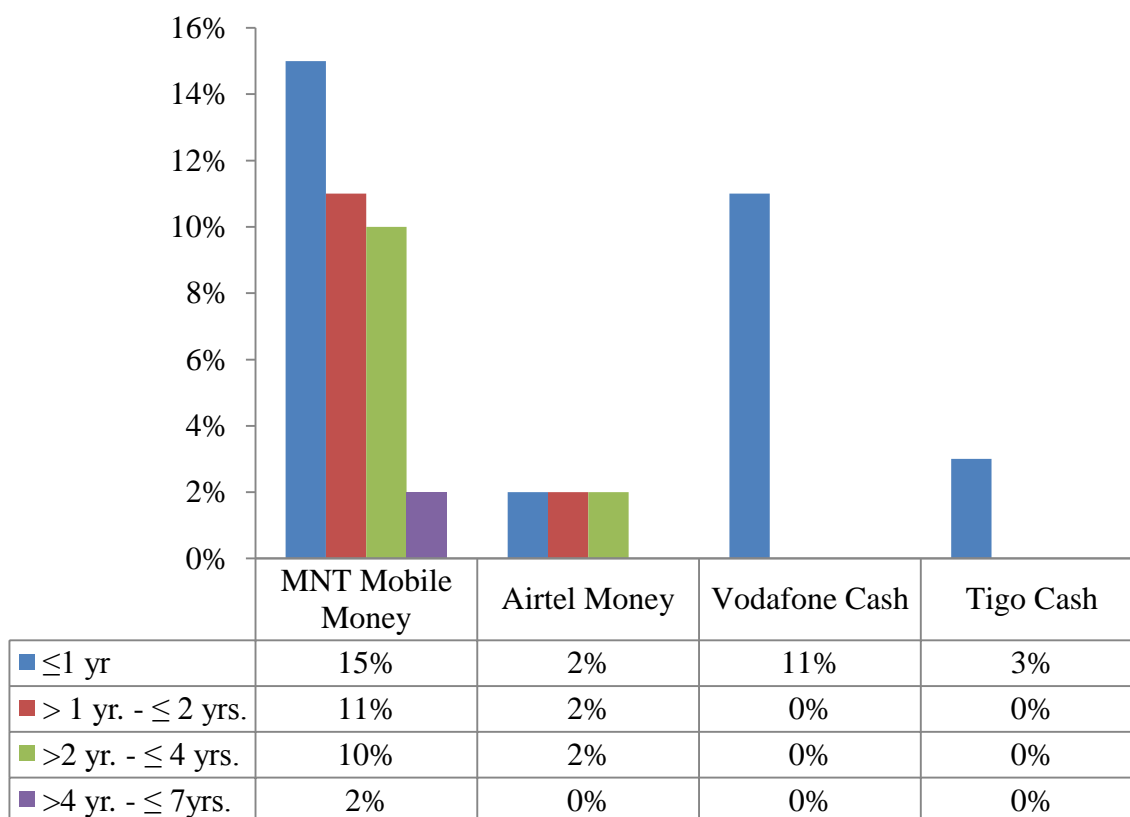


Source: Field data, 2016

4.4.2 Utilization of Specific Mobile Money Services

The specific mobile money services that are available to subscribers include MTN Mobile Money, Airtel Money, Vodafone Cash and Tigo Cash. From Figure 4.2, a total of 38% had MTN Mobile Money Account, 6% had Airtel Money account, 11% had Vodafone Cash account and 3% had Tigo Cash account. On the utilization of mobile money services, it was revealed that 31% of the respondents have used the mobile money services for atleast one year. 13% were found to use the services for more than one year to exactly two years (>1 to ≤ 2), 12% were found to use the services for more than two up to exactly four years (>2 to ≤ 4), and 2% were found to use the services for more than four years to exactly seven years (>4 to ≤ 7).

Figure 4.2: Utilization of Mobile Money Service among Mobile Money Account Users



Source: Field data, 2016

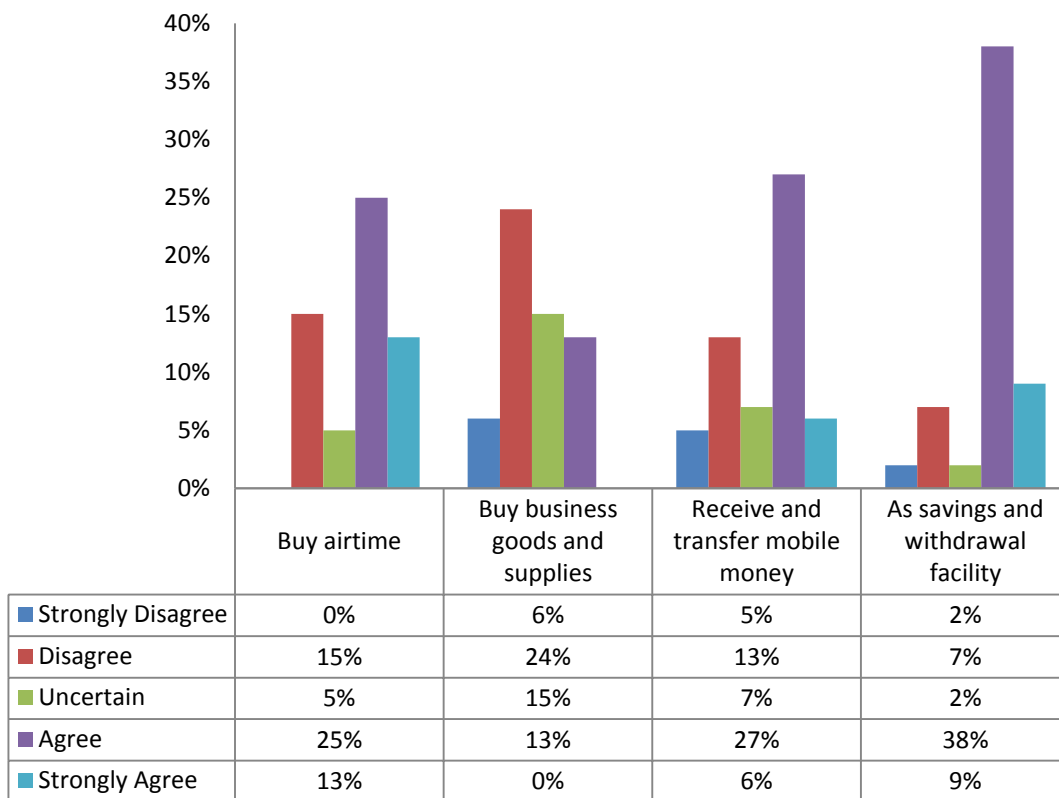
However, a critical look at the period of utilization of mobile money services among the individual mobile money service providers, the period of utilization remain high among the respondents who use MTN Mobile Money accounts. In the survey, 15%, 11%, 10% and 2% of MTN Mobile Money accounts users reported that they had used mobile money for atleast one year, more than one year to exactly two years (>1 to ≤ 2), more than two up to exactly four years (>2 to ≤ 4), and more than four years to exactly seven years (>4 to ≤ 7), respectively.

From the survey, the use of MTN Mobile Money has increased substantially in the past year and appears likely to continue to increase as more consumers use mobile money or recognize the convenience of this service. This increasing trend from 2% to 15% over the years demonstrates that a significant fraction of mobile money accounts users have only recently adopted the technology and the extent to which the respondents have become engrained in MTN Mobile Money.

4.4.3 Factors that Motivate the use of Mobile Money Services

Survey respondents were given a set of screening questions to indicate how or why they prefer using mobile money services over retail banking. Most of the respondents agreed that mobile money accounts gave them easy access to buy airtime, receive and transfer mobile money. Most of them also agreed that they used their mobile money account as savings and withdrawal facilities.

Figure 2.3: Reasons for Mobile Money Service Utilization



Source: Field data, 2016

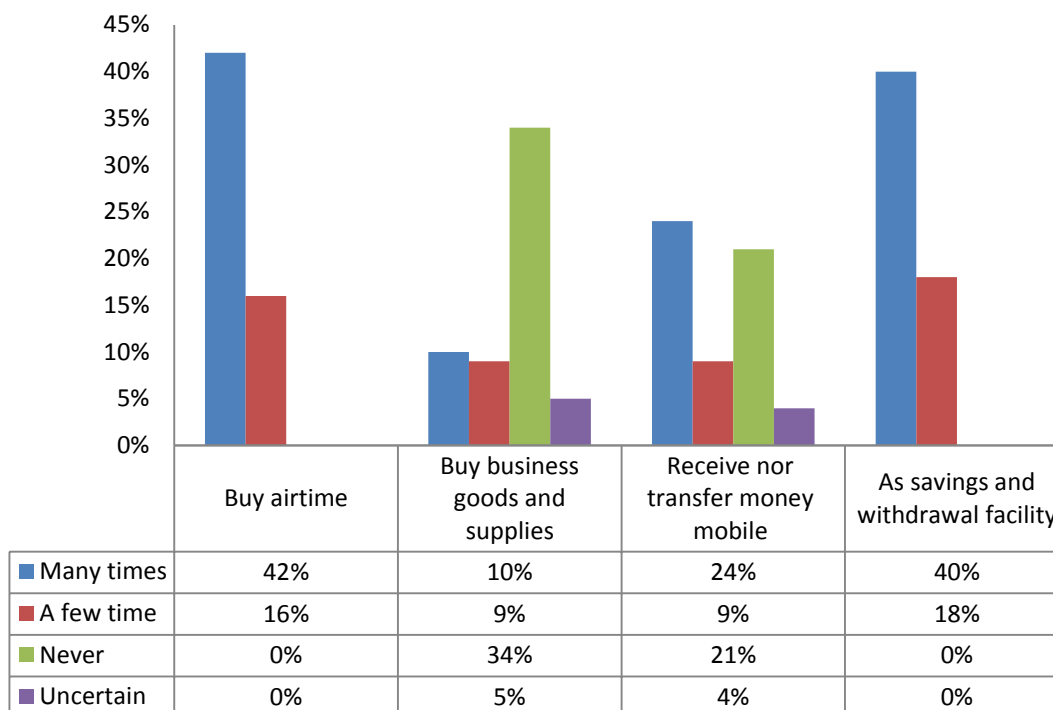
From Figure 4.3, using mobile money as savings and withdrawal facilities was relatively higher among majority of the respondents. 38% of the respondents agreed that they used their mobile money account as savings and withdrawal facilities, 27% agreed that they use their mobile money account to receive and transfer money, and 25% agreed that their account was purposely used to buy airtime.

4.4.4 Using Mobile Money Account for Financial Transactions

We can infer from Figure 4.4 that the users of mobile money accounts generally access them frequently to buy airtime and as savings and withdrawal facilities. These are represented by 42%

and 40% of the respondents, respectively. Even though 21% of the respondents indicated that they have never received nor transferred money before, the 24% of respondents who indicated that they have done this for many times is worthy to be considered significant.

Figure 4.4: Using Mobile Money Account for Financial Transactions



Source: Field data, 2016

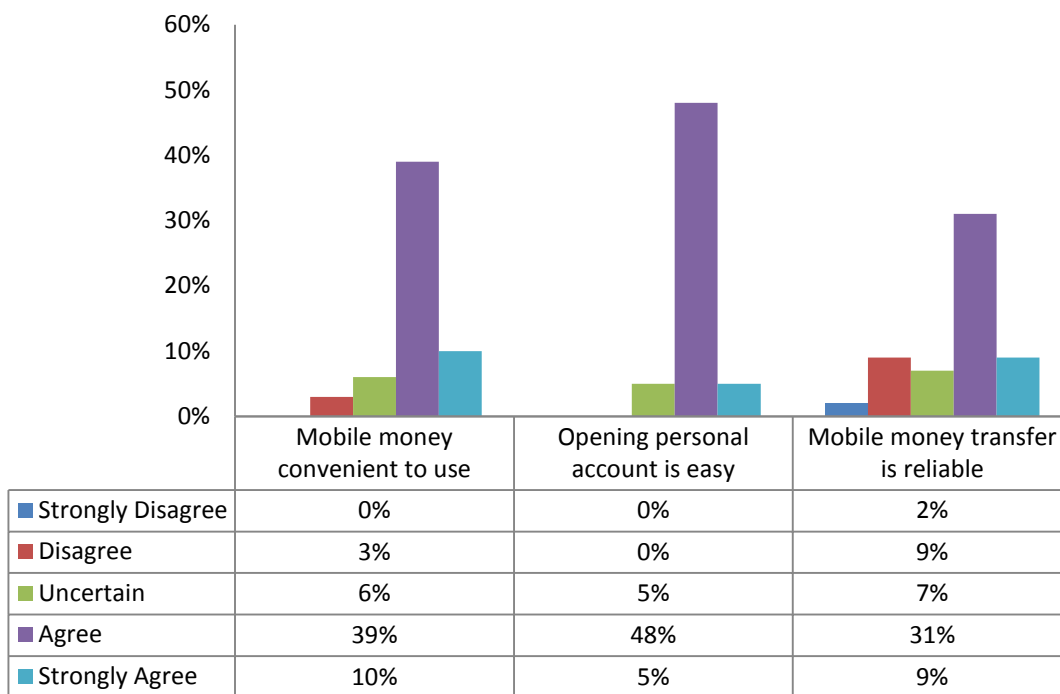
4.5 The Accessibility of Mobile Money Services and Retail Banking

4.5.1 Convenience and Reliability of Mobile Money Services

In this section the researcher sought to find out the accessibility of mobile money services in terms of the following; security of savings, convenience, efficiency of transactions, flexibility, safety, secrecy, reliability, promptness of agent servicing. However, in this study, service quality is measured as convenience, access and reliability. These high-intensity users show a higher likelihood of engaging in all types of activities relative to mobile money. 39% of the mobile

money account users agreed convenience is the most common reason consumers give for subscribing to mobile money instead of opening a bank account, 48% of the respondents indicated that opening personal account is easier with mobile money than it is in retail banking. Indeed, consumers appreciate ease of access (anytime, anywhere) and reliability of the service (Heyer & Mas, 2009). The 31% of respondents, in this study, consider mobile money as reliable for use.

Figure 4.5: Convenience and Reliability Mobile Money Services



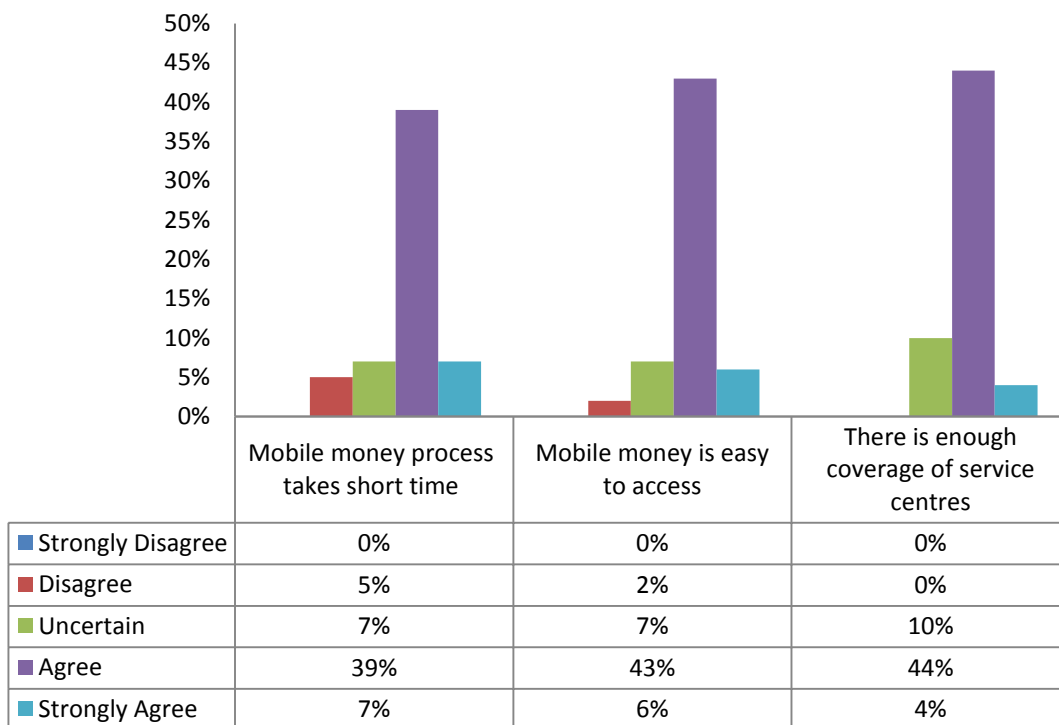
Source: Field data, 2016

We conclude from the above that convenience, access and reliability influence users' to subscribe to mobile money services than holding a bank account.

4.5.2 Waiting Time, Ease and Coverage of Mobile Money Services

In the survey, most of the respondents representing 39%, 43% and 44% agreed that the distribution of mobile money services allows its process to takes short time, easy to access and for the availability of enough coverage of service centres.

Figure 4.6: Waiting Time and Coverage of Mobile Money Services



Source: Field data, 2016

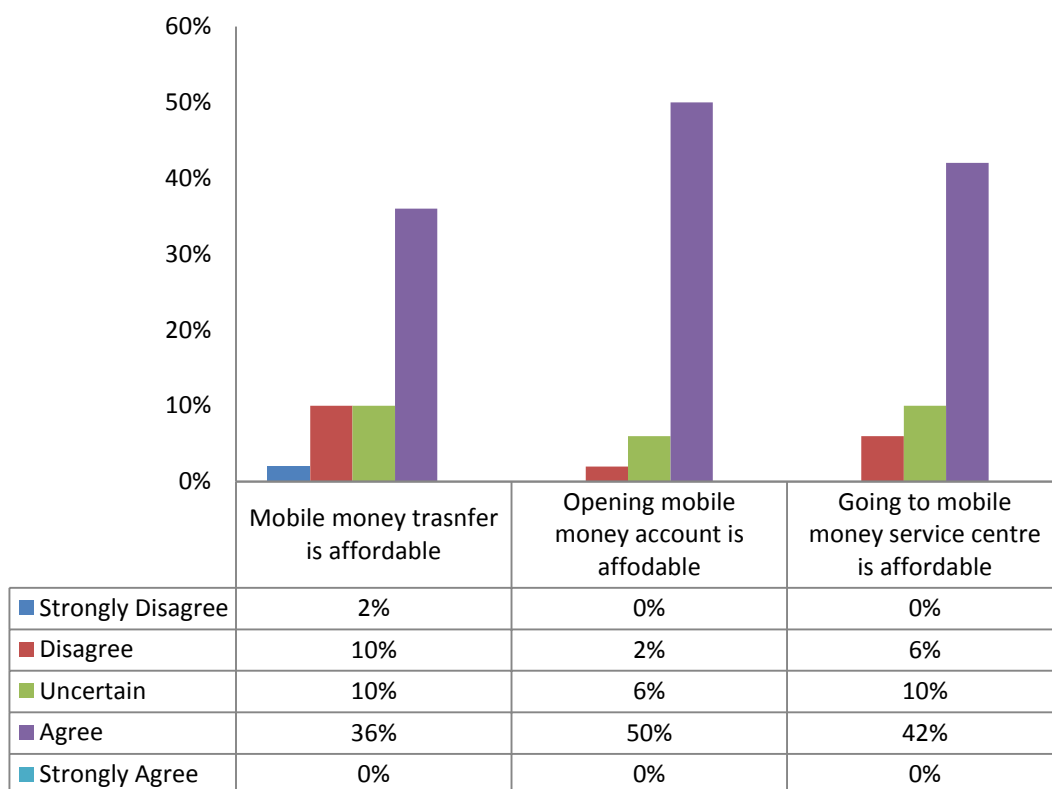
4.5.3 Affordability of Mobile Money services

The study also compared the affordability of mobile money services relative to retail banking services. From figure 4.7, 36% of mobile money account users consider mobile money transfers to be affordable. This implies that mobile money is seen to have presented a new way of making financial transactions affordable for lower-income users. Not only does it offer mobile money

transfer affordability to its users but also exactly half of the respondents agreed that opening mobile money account is also affordable.

Distance, a predominant factor, plays a very important role when it comes to access to financial service. Since the study discovered that most of the respondents who use mobile money services are low-income earners who earn $1001 \leq 2000$ per month, it further revealed that 42% of the respondents consider going to mobile money service center is much affordable. Finally, 50% of the respondents agreed that the cost of opening a mobile money account is relative cheaper compared to opening a bank account.

Figure 4.7: Affordability of Mobile Money Services

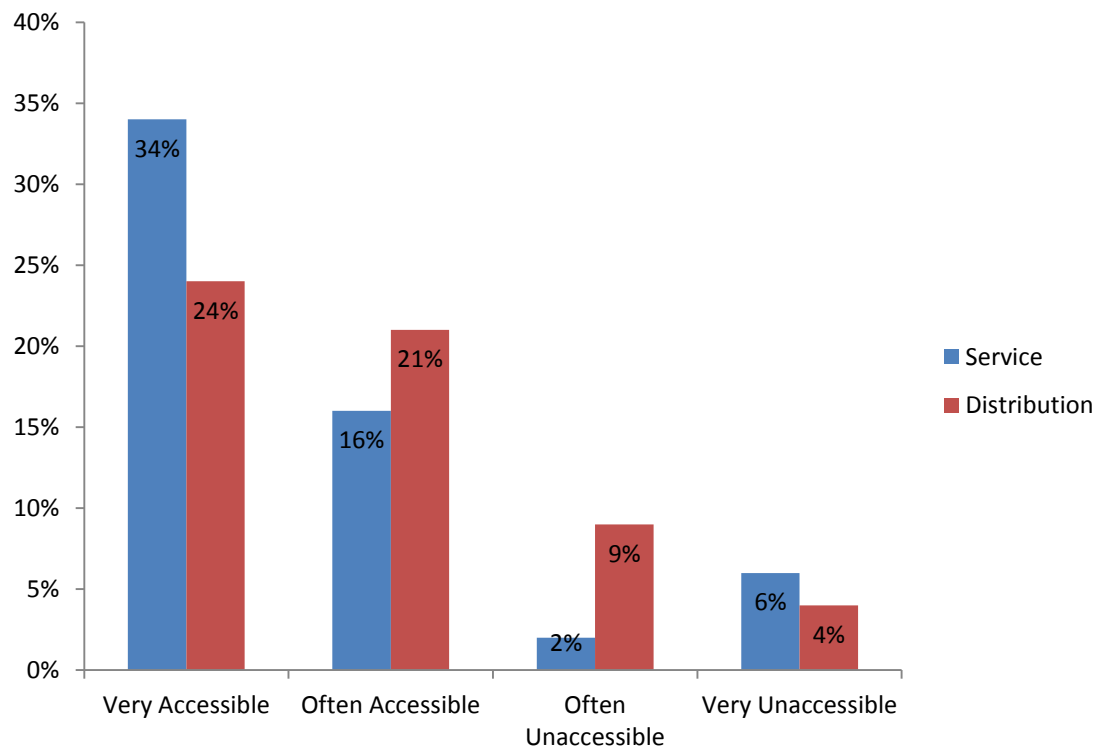


Source: Field data, 2016

4.5.4 Services and Distribution of Mobile Money Services

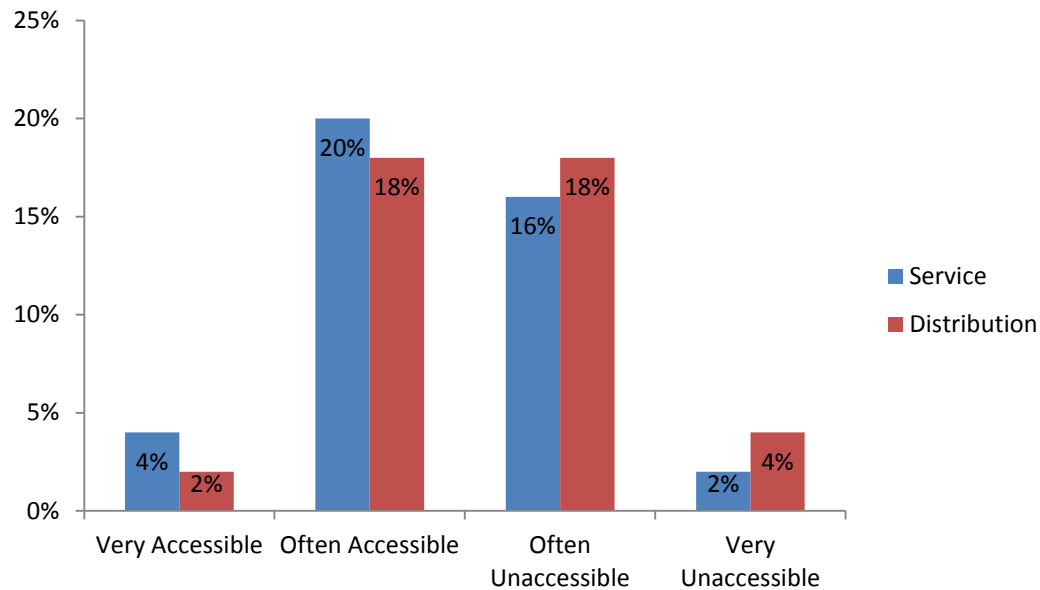
In this study, Figure 4.8 and Figure 4.9 measured financial accessibility of mobile money services and retail banking services in terms of service and distribution of financial service. It was discovered that 34% and 24% of the respondents have a positive view about the accessibility of mobile money in terms of availability of service and distribution, respectively. However, Figure 4.9 shows that with retail banking account users, retail banking is not very accessible in terms of services and distribution.

Figure 4.8: Services and Distribution of Mobile Money Services



Source: Field data, 2016

Figure 4.9: Service and Distribution Mobile Money Services



Source: Field data, 2016

4.6 Challenges of Retail Banking in Kumasi

While retail banking focuses on developing the Micro, Small, and Medium scale Enterprises, High Net worth individuals, salaried workers, religious organizations, Educational Institutions, Health Institutions and Clubs and Associations (Ndamenenu, 2011), Ghana can be regarded as a cash-based economy because majority of retail payments are made in cash. According to Ndamenenu (2011) the retail banking activities thrives in three (3) distinct units of a bank which include Branch Banking, Consumer Finance, and Commercial Finance.

More broadly, the Branch Banking unit oversees sales and distribution of the retail segment and accordingly handles the development and marketing of liability products of the Bank. This unit champions the deposits mobilization drive of the Retail Bank, workings through the branches, and offering competitively attractive liability products to its clientele. This includes current accounts, savings accounts, fixed deposits and Western Union services. While the division of

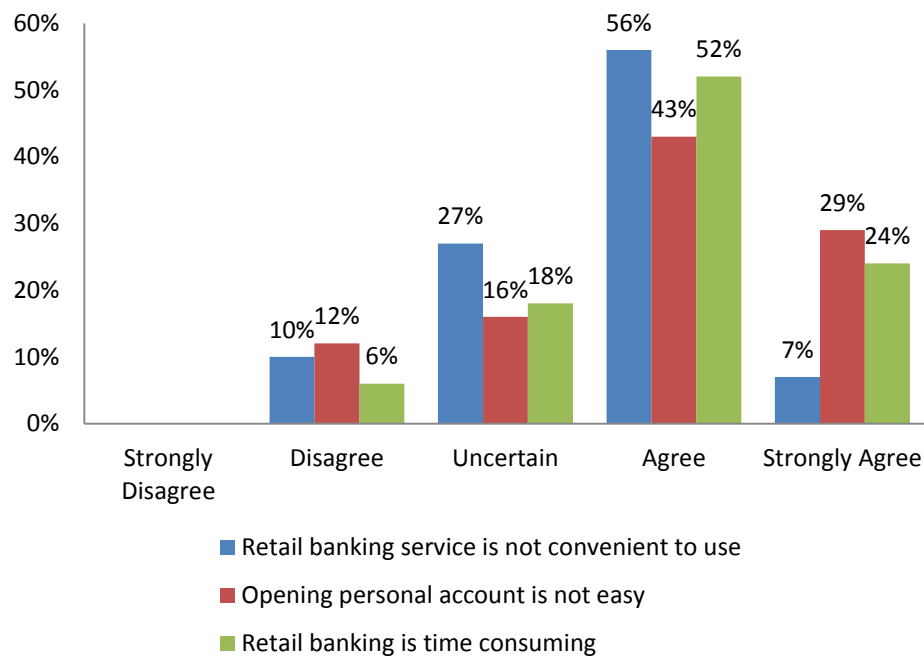
retail banking that deals with lending money to consumers is the consumer finance including a wide variety of loans such as mortgage loans, and auto loans, and can also be used to refer to loans taken out at either the prime rate or the subprime rate, the commercial finance unit is responsible for providing finance to Small and Medium Scale Enterprises (SMEs). The unit accordingly offers various credit products such as Business Loans, Receivables-Financing, Discounting, Import Financing to businesses.

In this study, it was revealed that notwithstanding the progress made in the promotion of retail banking in Ghana, there are some challenges that can be observed in the existing banking arrangements. While some of the challenges are general problems facing other banking practices, there are those which are peculiar to retail banking. The analysis of challenges on a 5-point Likert-type scale (1=strongly disagree to 5=strongly agree) shows that peculiar challenges of retail banking can be analysed in the service quality, distribution, and cost of retail banking in Ghana.

4.6.1 Waiting time, Flexibility and Convenience of Retail Banking

From the results in Fig. 4.1, more than half of the respondents (56%) agreed to the fact that retail banking is not convenient to use because it does not cater for impromptu needs which require immediate attention of solution. Retail banking does not allow immediate access to money 24 hours a day. According to the findings, 43% of the respondents also agree that, in retail banking, opening personal account is not easy. However, a little more than half of the respondents (52%) still agreed that retail banking is time consuming.

Figure 4.10: Convenience, Ease and Waiting Time of Retail Banking



Source: Field data, 2016

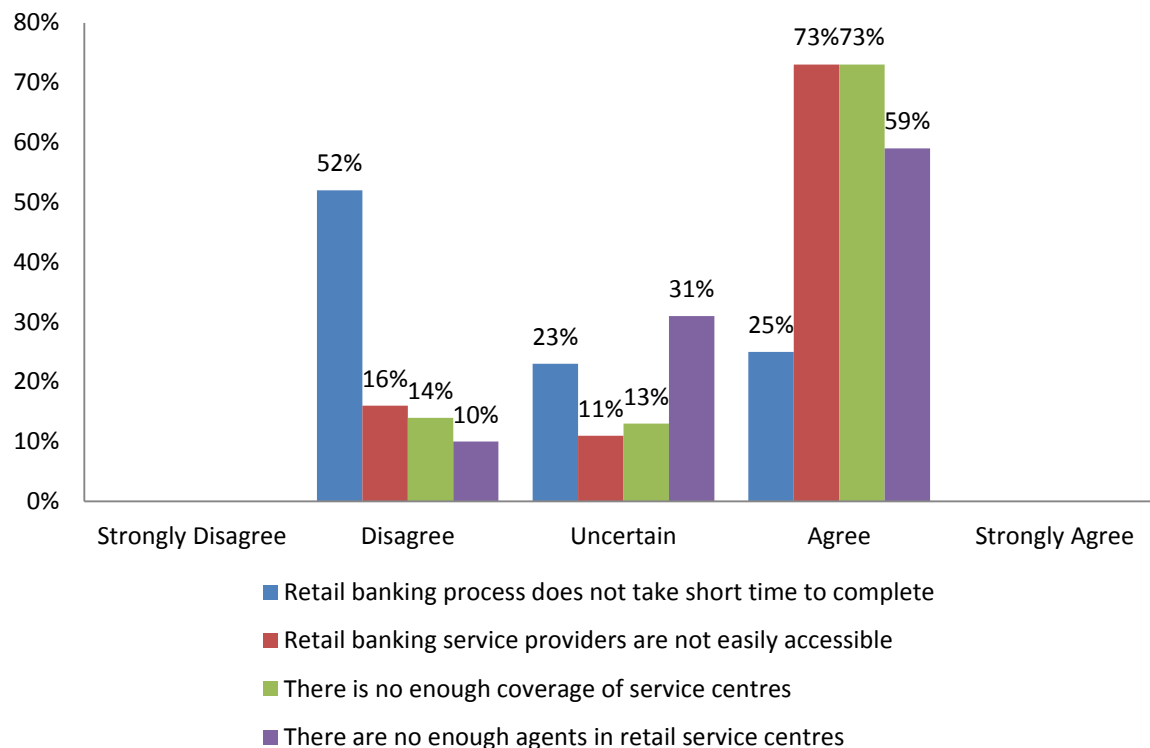
According to Lau et al. (2013), three things define service quality. That is, convenience, easy to use and the time spent accessing the service. Service quality is generally regarded as a way to retain existing customers and acquire new ones, reduce costs, enhance corporate image, generate positive word-of-mouth recommendation, and improve profitability. This means in the absence of good service quality, retail banks will lose existing customers and find it difficult to acquire new ones, decrease costs, reduce corporate image, destroy positive word-of-mouth recommendation, and decrease profitability.

4.6.2 Process, Service Provision, Coverage and Availability of agents

On the Likert scale, it is interesting to note that the same frequency of 73% respondents agreed that retail banking service providers are not easily accessible as there is no enough coverage of

retail service centres in Ghana. Again, 52% of the respondents agreed that the processes involved in retail banking takes a longer time. Also, 59% of the respondents agreed that there are no enough agents in retail service centres.

Figure 4.11: Process, Service Provision, Coverage and Availability of agents

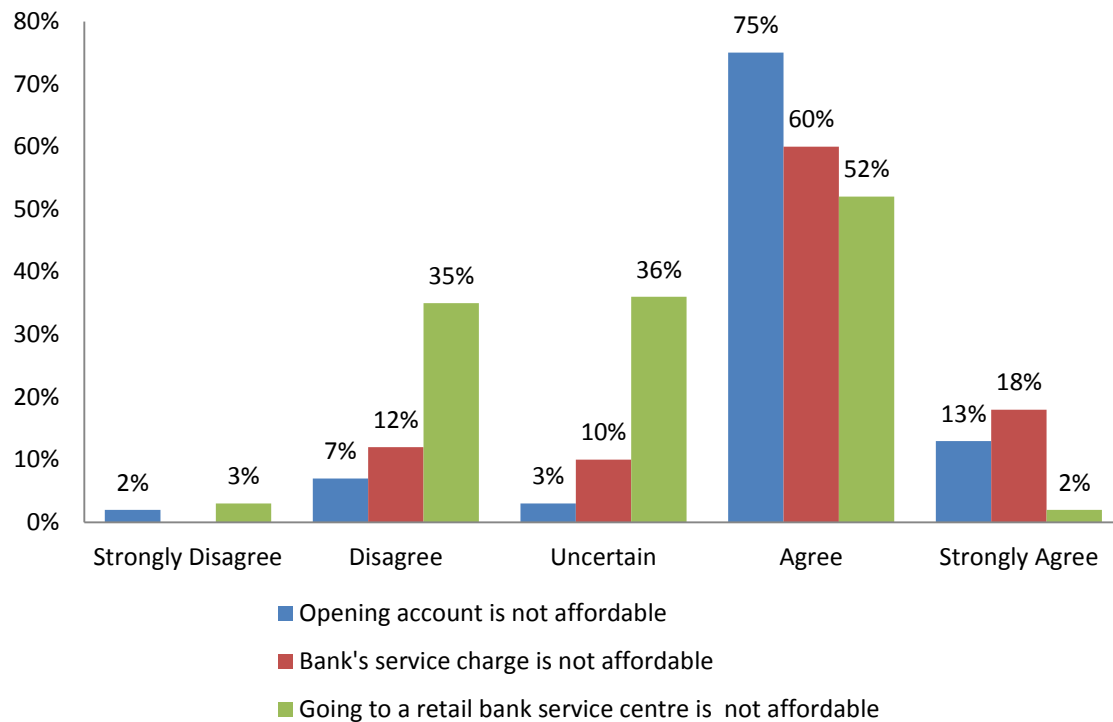


Source: Field data, 2016

4.6.3 Affordability of Retail Banking

Figure 4.12 shows that exceedingly more than half of the total respondents from all the three selected banks, representing (75%) of the respondents, indicated that not only is opening account in retail banking not easy but it is also not affordable, considering the cost. 60% of the respondents agreed that bank charges in retail banking are not affordable. This notwithstanding, 52% of the respondents also agreed that going to a retail banking centre is also not affordable.

Figure 4.12: Affordability of Retail Banking Services



Source: Field data, 2016

Based on the results, even though there were some respondents who disagreed, strongly disagreed and uncertain about the existence of challenges relative to service quality, distribution, and cost in retail banking, it is apparent that retail banks faces numerous challenges at the same time, from new regulatory requirements and controlling costs to changing customer demands in a 'digital and mobile' retail banking reality (Kodak Alaris Inc., 2016).

CHAPTER FIVE

SUMMARY OF FINDINGS, RECOMMENDATIONS AND CONCLUSIONS

5.1 Introduction

This section summarizes all the major findings of the study, makes a conclusion based on the findings and also makes appropriate policy recommendations and implications. The summaries of findings are based on the specific objectives that are studied.

5.2 Summary of Findings

The study makes a comparative study of mobile money services and retail banking services in the Kumasi metropolis. More specifically, the study sought to examine the users' preferences of mobile money services and retail banking services, it also sought to compare the accessibility of mobile money services and retail banking services, and finally to examine the challenges of retail banking services. The study employed a sample of one hundred and thirty (130) respondents. Using descriptive statistics and likert-scale, the results revealed that majority of the respondents who use mobile money services are males between the ages 26-35. Most of these respondents are employees who earn $1001 \geq 2000$ per month.

It was found that the demand-side indicators of assessing the effect of mobile money on retail banking from the context of service quality, distribution and cost cannot be efficiently assessed in isolation to the inherent challenges of retail banking. This is because it is clear from the study that the challenges of retail banking allow the adoption of mobile money services to thrive among the lower-income users. A critical finding of this study is that mobile money services affect users' preference to financial service among the low-income users in the Kumasi

metropolis to bring retail banks into unmatched competition in mobile network operators, their vitality and ability to modernize. The increasing use of mobile money services among the low earning income category is highly associated with decreases in retail bank users in a way that this tends to pose threat to the growth of retail banking. The majority of users generally access mobile money accounts frequently to buy airtime, receive and transfer mobile money and as savings and withdrawal facility.

Again it was found that retail banking in Kumasi faces peculiar challenges in service quality, distribution, and cost. According to the findings, the various challenges associated with service quality in retail banking include lack of convenience to use because retail banking does not cater for impromptu needs which require immediate attention of solution; opening personal account is not easy; retail banking is time consuming even in this era when service quality in banking is changing with the emergence of new technologies.

It is interesting to note that in line with the distribution of retail banking services, the study found out that retail banking service providers are not easily accessible as there is no enough coverage of retail service centres in Ghana.

5.2 Conclusions

The study highlights the effects of mobile money services on retail banking in the Kumasi Metropolis. The study shows that the use of mobile money services is prominently affecting the preference of financial intermediation among the low income users in the metropolis. More importantly, mobile money service is appreciated as a good replacement to many informal

savings machineries as well as a bank account for small savers and unbanked users who are seeking for convenient immediate attention of financial intermediation, easy access to financial account, and access to financial solutions.

Basically, the increasing use of mobile money services among the low earning income category has been highly associated with decreases in retail bank users in a way that this tends to pose threat to the growth of retail banking; yet mobile money services have not dispelled the need for retail banking.

Overall, it is clear from the study that the challenges and perceptions of the retail banking in the lives of mobile money account users allow the adoption of mobile money services to thrive among the lower-income users. This is a promising sign of the possible of mobile money for increasing the financial inclusion of low income earners in the Kumasi Metropolis.

5.3 Recommendations

On the account of the study findings, it is recommended that banks should consider the possibility of collaborating with mobile network operators in the mobile payments value chain that are user friendly.

Again it is recommended that retail banks develop deposit and withdrawal platforms that will meet the needs and requirements of different customer. This will enable retail banks capture market niches that expands on market share and improved financial performance.

Retail banks must embark on vigorous technological expansion that is geared toward improving the quality of service. The introduction of user friendly products and services will go a long way to make customers experience convenience when using services.

Mobile network operators must create partnerships with retail banks in the area of bulk cash transfers to enhance security. Creating partnerships will ensure that retail banks and mobile network operators enjoy the full benefit of their operations.

Retail banks can only compete successfully with the mobile money service operators if they make their products and services affordable and accessible. Retail banks must therefore reduce the cost of opening an account and also establish agencies throughout the country.

Finally, it is recommended that management of retail banks should adopt measures that will reduce the minimum waiting time at branches and improvement on the human relationship by staff. This measure will draw many clients back to the banking hall because it is believed that clients prefer to subscribe to mobile money service since it requires less time.

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APPENDIX
QUESTIONNAIRE

QUESTIONNAIRE ON THE IMPACT OF MOBILE MONEY SERVICES ON RETAIL
BANKING

Dear Participant,

This study is examining the impact of mobile money services on retail banking. Because you are a mobile money/retail banking service user we are inviting you to participate in this study by completing the surveys. The following questionnaire will require approximately **15 minutes** to complete. There is no compensation for responding nor is there any known risk. In order to ensure that all information will remain confidential, please do not include your name. Copies of the project will be provided to Kwame Nkrumah University Of Science And Technology. If you choose to participate in this project, please answer all questions as honestly as possible and return the completed questionnaires promptly to us. Participation is strictly voluntary and you may refuse to participate at any time.

Thank you for taking the time to assist in this important study. The data collected will provide useful information regarding the impact of mobile money services on retail banking.

DEMOGRAPHIC DATA OF RESPONDENT

Please tick [✓] all appropriate options

Age: 16-25 ☐ 26-35 ☐ 36 – 45 46 – 55 56 – 65 ☐

Gender: Male ☐ Female ☐

Employment Status:

Unemployed ☐ Employee ☐ Self-employed ☐ Business Owner ☐

Earning per month: $0 \geq 100$ ☐ $101 \geq 1000$ ☐ $1001 \geq 2000$ ☐ $2000 \geq$ ☐

CUSTOMERS' PERCEPTION TO EXISTING BANKING ARRANGEMENTS

Please tick [✓] all appropriate options

Variable	Strongly Disagree	Disagree	Uncertain	Agree	Strongly Agree
1. Service Quality					
Retail banking service is easy to use					
Opening personal account is easy					
Retail banking is reliable					
Tellers are consistently courteous					
2. Distribution					
Takes short time for retail banking process					
I can easily access retail banking tellers					
There is enough coverage of service centers					
Gives service whenever I want					
There is enough agents in service centers					
3. Cost					
Retail banking is affordable					
Opening an account is affordable					
Bank's service charge is affordable					
Going to a bank service center is affordable					

THE IMPACT OF MOBILE MONEY SERVICES ON RETAIL BANKING

1. Do you use mobile money services? Yes ☐ No ☐

If YES to question 1, please answer questions 2 – 4

2. Which mobile money service do you use and for how long? **Please tick [√] all appropriate options**

Service Provider	≤ 1 yr	>1 yr - ≤ 2 yrs	> 2 yrs - ≤ 4 yrs	>4 yrs - ≥ 7 yrs
MNT Mobile Money				
Airtel Cash				
Vodafone Cash				
Tigo Cash				

3. Please indicate how/why you have been using mobile money services. **Tick all appropriate options**

Service Provider	Strongly Disagree	Disagree	Uncertain	Agree	Strongly Agree
Buy airtime					
Buy business goods and supplies					
Receive money from another dealer/customer					
Receive salary					
Pay salaries					
Deposit money into mobile phone account					
Withdraw money from mobile phone					
Pay business bills					
As a savings facility					
Insurance premiums remittances					

4. Please indicate, relatively, how often you have been using mobile money services. **Please tick [√] all appropriate options**

Service Provider	Many times	A few times or once	Never	Don't Know
Buy airtime				
Buy business goods and supplies				

Receive money from another dealer/customer				
Receive salary				
Pay salaries				
Deposit money into mobile phone account				
Withdraw money from mobile phone				
Pay business bills				
As a savings facility				
Insurance premiums remittances				

CUSTOMERS' PERCEPTION OF MOBILE MONEY TRANSFER SERVICES

Please tick [✓] all appropriate options

Variable	Strongly Disagree	Disagree	Uncertain	Agree	Strongly Agree
1. Service Quality					
Mobile money transfer is easy to use					
Opening personal account is easy					
Mobile money transfer is reliable					
Mobile money transfer agents are consistently courteous					
2. Distribution					
Takes short time for money transfer process					
I can easily access mobile money transfer agents					
There is enough coverage of service centers					
Gives service whenever I want					
I can transfer money by my own					
There is enough agents in rural areas					
3. Cost					
Mobile money transfer is affordable					
Opening an account is affordable					
Agent's service charge is affordable					

Going to an agent service center is affordable					
Receiving money using mobile money transfer is affordable					
Sending money from an agent is affordable					
Sending money from personal account is affordable					