

**UNIVERSITY OF GHANA**

**LEGON**



**THE CONTRIBUTION OF MOBILE MONEY TO FINANCIAL INCLUSION WITHIN  
THE GHANAIAN FINANCIAL SECTOR: A CASE STUDY OF THE AWUTU-BREKU  
AREA**

**BY**

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**DECLARATION**

I, Harriet KuvemYagra, hereby declare that, except for references to other people's works which have been properly acknowledged, this project is my original research work, and that no part has been published, nor presented for any degree elsewhere.

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## **DEDICATION**

I dedicate this work first to the Almighty God whose guidance has led me this far. I also dedicate this work to my family and my colleagues for their encouragement, support, love and effort in various way of my schooling.

## **ACKNOWLEDGEMENT**

Writing this long essay required co-operation and assistance of many people. I am pleased to take this opportunity to express my gratitude to everyone who have being of help to me in completing this research. My deepest appreciation goes to the Almighty God for granting me strength, knowledge and understanding and then to my supervisor Dr. Patrick Asuming of the University of Ghana, for his remarkable support towards the completion of this long essay. I also wish to thank the respondents for the study and the numerous mobile money agents within the Awutu-Breku Area of the Central Region of Ghana for helping me during the data collection stage of the study.

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## **ABSTRACT**

Ten years after the launch of the first mobile money solution in Ghana, the service can be said to be a game changer in the country's financial services industry. The research aimed at assessing the contribution of mobile money towards the promotion of financial inclusion within the Awutu-Breku area. The study was a descriptive research and the population made up of the users of mobile money. The study used a simple random sampling technique to sample three hundred and twenty-four (324) users of mobile money to answer a designed questionnaire. The study proved that there exists a relationship between financial inclusion and mobile money. The study also indicated that mobile money has led to an increase in financial inclusion. Challenges such as fraud, PIN loss, and network hitches were indicated as hindrances to the mobile money platform. The research made various recommendations such as more security measures should be added to solve the issue of fraud and PIN loss; the regulation of the mobile money service and the instigating of a stakeholder analysis to help improve the service.

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## CHAPTER ONE

### INTRODUCTION

#### 1.1 Background of the Study

The financial system within the country has seen a transformation within the past 20 years. This started with the Financial Sector Adjustment Programs (FINSAP I and II), which was employed from the 1980s. During this time, government owned banks dominated the banking industry within the country which made it non competitive and the intermediation process played by the banks was not effective. According to MOFEP Report (2012), these financial reforms was to restructure banks that were already financially strained, to enhance the regulating and the supervising of the banks and to promote the operations and entry of non-bank financial organizations.

The exemption from various individuals from enjoying the financial services offered by various financial institutions has been seen as a significant hurdle to the eliminating of poverty within the country (Donovan, 2012). The inability of individuals to access financial services has different effects on the person's ability to invest, save and respond to economic shock shocks (Aker & Wilson, 2013). In the instance where financial inclusion is less, economic growth is less and higher inequality ion income. Financial inclusion refers to the absence of price or non-price barriers in the use of financial services (Sharma & Kukreja, 2013). It encompasses all the activities and policies that ensure financial service are made obtainable, user-friendly and inexpensive to the entire population of a country.

Comparing Africa to other parts of the world, the continent has been deemed to have the lowest levels of financial inclusion. Only 25% of the adult population own account in a formal financial

institution compared with 39% in Latin America and the Caribbean, and 89% in high income countries (Demirguc-Kunt & Klapper, 2013). Due to this, various governments within the African continent have adopted financial inclusion as a way to enhance the growth of the economy and develop their countries. To ensure the poor also have access to financial services, most studies and researchers have cited mobile money as a possible means to achieve this.

Mobile money includes all the various initiatives (long-distance remittance, micro-payments, and informal air-time topping schemes) that is aimed at bringing financial services to the part of the population that do not have access to financial services or termed as the unbanked population through the use of mobile networks or technology. Mobile Money was defined by Jenkins (2008) as money that can be accessed and used through a mobile phone. The growth of the usage of mobile phones around the world and specifically in Africa has made mobile money a great innovation. Research shows that Seventy-five percent (75%) of the 4 billion mobile phones used around the world are used in developing countries such as Ghana and various studies have estimated that within the next 10 years, the number of mobile phones used around the world will be more than the total population of the world. A recent study by the World Bank shows that mobile phone usage increases the growth of the Gross Domestic Product of a country by 0.8 percent by any additional 10 phones introduced per one hundred individuals in developing countries. (Tobbin, 2010).

## **1.2 Problem Statement**

In Ghana, the first mobile service was launched by MTN ten years ago. The introduction of the service can be termed as a game changer in the offering of financial services within the country. From its introduction in 2009, mobile money has grown to the stage that its users are mostly compared the users of banks within the country. Despite the mobile money initiative in Ghana

being mainly driven by mobile network operators such as MTN, Vodafone and AirtelTigo, it should be noted that mobile money works alongside a partnership with the various banks within the country. Mobile money is expected to affect the financial service delivery within the country in forthcoming years as it helps to address a major issue to the Government and the banking industry which is financial inclusion (Ghana Banking Survey, 2018).

In order to reduce poverty and help promote the growth of the economy, there should be the improvement in the access to financial services such as savings, deposits, insurance and remittances which are very important in the fight against poverty. In many developing countries which Ghana is included, 9 out of 10 people do not have bank account or access to basic financial services. Mobile money innovation is a feasible platform through which financial services can be expanded to a large section of the population at a lower cost as compare to accessing traditional banking services which requires considerable investments both infrastructure and personnel (Jack & Suri, 2011). There have been efforts by both the government and its partners to improve financial inclusion such as the introduction of the mobile money interoperability launched by Dr. Mahamudu Bawumia in 2018.

Despite these efforts and developments, there is limited study on the extent to which mobile money services have impacted on the financial inclusion within the country. The study, based on this background seeks to assess the extent that mobile money services or activities have promoted financial inclusion.

### **1.3 Purpose of Study**

The main research objective of the study was to assess how mobile money services/activities have helped to promote financial inclusion within the country. The specific objectives of the study are:

- i. To determine the status of mobile money usage and subscription within the Awutu-Breku Area.
- ii. To assess the impact that mobile money services have on financial inclusion.
- iii. To determine the challenges faced in accessing mobile money services.

#### **1.4 Research Questions**

The specific research question that the study sought to answer was to assess the extent to which mobile money services/activities have helped to promote financial inclusion in Ghana. The specific research questions were as follows:

- i. What is the nature of mobile money usage and subscription within the Awutu-Breku Area?
- ii. What is the effect of mobile money on the financial inclusion in Ghana?
- iii. What are the challenges faced in accessing mobile money services?

#### **1.5 Significance of the Study**

The study aims at evaluating the critical issue of financial inclusion within the financial sector of the Ghanaian economy. The study provides vivid information on the nature of mobile money in the Awutu-Breku township and suggests recommendation to help provide effective mobile money services. The study would also aid policy makers formulate appropriate strategies to tap the potentials in the mobile money sector

It would improve understanding of issues such as the importance of mobile money to financial inclusion, the challenges faced and its expected benefits to both the financial system and the customers. The study would also provide deeper insight into the essence of mobile money in terms of supporting the general financial setup in the country.

The study would also serve as a reference material for researcher in the area of financial inclusion, mobile money and the Ghanaian financial system. The information provided by the study would be useful to the industry players within the countries financial sector and customers would be able to know how mobile money has helped to improve financial inclusion within the country.

### **1.6 Scope of the study**

The overall scope of the study was to ascertain the extent to which mobile money services/activities have enhanced or promoted financial inclusion in the country. The study limited its scope to mobile money customers and vendors within Awutu-Breku. The area of study was selected due to its relevance to the aim of the study and also the conditions in the area with regards to the resident's usage of mobile money.

### **1.7 Organization of the Study**

This paper is organized into the following chapters:

Chapter one focuses on the introductory aspects of the research topic, it gives a general introduction to the research. This chapter is made up of the following, the background of the study, the statement of the problem, the research objectives and questions, the significance of the study, the scope and limitations of the study and how the various chapters are organized.

Chapter two reviews the related literature on the topic: that is the extent to which mobile money activities/services have helped to promote financial inclusion within Ghana. The researcher considered theoretical literature available on the subject matter.

Chapter three on the other hand deals with the methodology of the research. It covers the research design, population, the sampling techniques and the sampling size used and the data collection tools and tools for data analyses.

Chapter four is concerned with analysis of data and discussion of findings.

The last chapter which is chapter five deals with the summary of findings draws conclusions and suggests recommendations from the findings of the study.

## CHAPTER TWO

### LITERATURE REVIEW

#### 2.0 Introduction

A review of the literature refers to a summary of a specific finding established in studies similar to the topic under investigation, and which identify gaps in knowledge, relevant to the issues or variables under investigation. The chapter reviews literature relating to the subject area of this study.

#### 2.1 Theoretical Framework

##### 2.1.1 Theory of Financial Intermediation

The process through which surplus units deposit funds with financial institutions who then lend to deficit units is called financial intermediation (Bisignano, 2008). Achieving a steady flow of incomes from the surplus to the deficit units is the most important contribution of the intermediaries. The role played by financial intermediaries is essentially seen as that of creating financial commodities (Scholstens & Wensveen, 2005). Financial intermediaries are differentiated through four measures according to Bisignano (2008). The first one according to him is concerned with their main categories of liabilities which are deposits are specific for a fixed sum which is not related to the performance of the portfolio. Secondly, the liabilities are short term. The third one has to do with a high proportion of liabilities been able to be withdrawn on demand and the last measure having to do with the liabilities not mostly transferrable.

The purpose of financial intermediary is to check the issue of market imperfections such as transaction and information costs. Thus, a financial intermediary will not exist if there are no

imperfections in the market. In Financial markets, information asymmetries are particularly pronounced. Borrowers typically know their collateral, industriousness, and moral integrity better than do lenders. On the other hand, entrepreneurs possess inside information about their own projects for which they seek financing (Leland & Pyle, 1977).

## **2.2 Theoretical Definitions**

### **2.2.1 Financial Inclusion**

Financial inclusion is considered to be one of the sources of poverty reduction, included in the Millennium goals: Eradicate extreme poverty and hunger. This issue is not just related to charity: market opportunities among the poorest are underestimated and should be explored by multinational companies, as there is evidence that multinationals that provide services to the bottom-of-the-pyramid are successfully doing business in developing countries (Prahalad & Hammond, 2002). The challenge of most African economies is how to move funds from informal to formal economy. Mobile money institutions are a formal channel of storing funds. There are doubts whether its use is inclusive with the poor or not but there is a consensus that it is increasing the use of formal economy which also impacts in the lowest income. There are diverse opinions of what does financial inclusion mean.

The Maya Declaration also deepens in understanding the differences amongst circumstances and points out that financial inclusion must cover three issues: access, usage and quality. This declaration provides the basis for the expansion of financial inclusion and establishes a measurable set of commitments while keeping the local influence of solutions. The same measure is not necessarily useful for all regions and solutions differ between countries. Technology from the Developed World might require an infrastructure and labor skills not present in developing

countries. And, even amongst developing countries differences arise that might require different adaptations: different political stability, infrastructures (Weil & Rabasco, 2006). Most authors review the reasons why people are not using financial services: there are still people who have not got a governmental ID and not access to banking services, not being able to understand financial service, not trusting financial entities or religious issues (Beck, Demirguc-Kunt, & Peria, 2007).

The regulator also has an important role in the expansion of those services. Clear legal mandate to regulate/oversee mobile financial services but not being a stopper for this type of service. One of the characteristics of mobile payment is its reduced transaction cost and its capacity to allow low value transactions makes it suitable for the poor. But it does not exclude other customer segment. Payments are considered within the financial industry as an entry door for other financial services and rely on the network effect, the more users in one end (payer) the more users need on the other end (payee). Once users start using one payment mean, it is logical to think that this will increase loyalty and customer retention; customers will continue using that financial service provider for other services instead of swapping providers for different services. Behind this idea is also the need of interoperability, especially in mobile money operators, pointed out by African central bank. Interoperability means that the payment mean is accepted everywhere instead of using different financial providers for different services. Payments is a difficult issue to study

### **2.2.2 Mobile Money**

The use of mobile phones has allowed providing financial services to a population without access to a bank possible. This is mostly termed as mobile money, mobile payments or mobile banking. Shaik & Karjaluoto (2015) reviewed the most common terms that are used to define banking management using a mobile device. Researcher use various terms to refer to mobile banking

including m-banking; Amin (2006) called it branchless banking; Donner (2008) called it m-payments, m-transfers or m-finance and Amin (2006) called it pocket banking.

The term 'mobile' seems to be consistent on most definitions. Mobile is classified as a contactless payment made through a mobile phone as a means of payment. The sim card acts as the identifier, as a solution for the lack of a national ID for most of the population. The use of the sim card makes it easier for telecommunication companies to enter the market. However, Anti Money Laundering legislations and keeping the minimum level of Know your Customer is still a key issue (Rao, 2013). Know Your Customer is required in order to avoid money laundering issues: the same customer can have several small value deposits in different anonymous accounts and avoid tax payment on all of them count as anonymous. There is a list of different financial services that can be provided from a mobile phone, smart phone or not, that goes from bill payment or peer to peer payments and remittances to other services like PIN change or locates ATMs. Not all services are provided by all providers. And, even more important, not all providers provide m-banking services.

Mobile money has democratized the access to financial services: cheaper, fast, accessible and is pointed out as an important tool for financial inclusion and, thus, poverty reduction. The mobile money usage around the world is different based on various factors. These factors include the legal framework of the area, technologies and the economic conditions in that particular area. The key variables and determinants of the adoption of mobile money are the consumer need and experience. The massive usage of cellular networks allows telecom companies to extend their services to a wider geographic area that are not covered by the traditional financial institutions.

### 2.2.3 Characteristics of Mobile Payments

A mobile payment service in order, to become acceptable in the market, it must possess the following characteristics:

**Universality:** Mobile payments service must provide for transactions between one customer to another customer (C2C), or from a business to a customer (B2C) or between businesses (B2B). The coverage should include domestic, regional and global environments.

**Simplicity and Usability:** the application used for payment must be user friendly with little or no learning curve to the customer.

**Security, Privacy and Trust:** a customer must be able to trust a mobile payment service provider that his or her information may be misused.

**Cost:** The m-payments should not be costlier than existing payment mechanisms to the extent possible. It should be able to compete with other modes of payments in terms of cost and convenience.

**Speed:** the speed at which m-payments are executed must be acceptable to customers and merchants.

**Cross border payments:** the payment platform should be available globally in order to become widely accepted.

### 2.2.4 Overview of Mobile Money in Ghana

In Ghana, the introduction and adoption of mobile money took a tremendous turn which saw its usage grow over a short period of time after it was launched by the (MTN) in 2009 (Zetterli, 2012). Ghana has seen a boost in the growth of mobile phone usage within the past few years. Currently,

mobile phone users are estimated to about 11 million (Aker & Wilson, 2013) from just over 1% to 55% between 1999 to 2000. The increase in the usage of mobile money is mostly attributed to this increase in the usage of mobile phone within the country.

Households in Ghana have often depended on informal methods of transferring money. Examples of such informal methods include bus courier services and person to person messaging (Kikulwe, Fischer, & Qaim, 2014). This forms of transfers have had several challenges which include the increase in the risk of carrying or transacting business in cash due to armed robbery, theft and many more (Donovan, 2012). The introduction of mobile money has helped to do away with these issues since it is seen as safer and easier to send money (Davidson & Penicaud, 2011). The introduction and adoption of mobile money was slow and took a huge run which resulted in it experiencing a massive growth in the total number of users within a period of time. (Aker & Wilson, 2013).

### **2.2.5 Mobile phones and Financial Inclusion**

Before the arrival of mobile communications, financial institutions depended on fixed lines or satellites to connect branches, ATMs, point of sale machines, and other devices for providing services and products. Nowadays, mobile data channels provide reliable and cheaper forms of data connectivity. However, the potential of mobile communications to promote financial inclusion goes well beyond using the new communication channels to link existing devices. The widespread use of mobile communications has created new channels, new instruments, and new business models for providing financial services to people who have traditionally been excluded from the formal financial system. In 2009, it was estimated that more than one billion people in developing countries had mobile phones but did not yet have access to formal financial services. To date, about 100 million people worldwide use mobile services, most of them in Asia and Africa, and

this group is growing fast. The potential to reach even more people with mobile financial services is considerable.

The potential of mobile phones to promote financial inclusion is widely recognized, but some questions and uncertainties remain regarding the regulatory and policy environment required developing its potential and the implications if it succeeds. Mobile phones have enabled mobile operators to participate in the provision of certain financial services in various markets, simultaneously increasing competition and raising issues of regulatory scope. Proliferating business models and technology choices contribute to the complexity of the issues.

#### **2.2.6 Mobile Financial Service**

A mobile financial service is commonly used as an umbrella term to describe any financial service that is provided using a mobile device. Mobile money is sometimes used as a substitute, although some use this term more narrowly to refer to the underlying source of value for mobile payments.

This broad definition can be further delineated:

**Mobile banking** (m-banking) is the use of a mobile device primarily as a channel to conduct transactions from one or more bank accounts. These transactions may include payments from one bank account to other bank accounts. Mobile banking services typically offer a range of informational functions as well, such as balance enquiries, simplified statements, transaction notifications, or account alerts. Mobile banking is a subset of electronic banking (e-banking), which includes Internet banking and the use of non-mobile channels such as ATMs and Point of Sale devices.

**Mobile payment (m-payment)** is the use of a mobile device to make a payment. M-payment may involve creating a new instrument, such as e-money, to serve as the source from which and to

which value is transferred. However, m-payment may be made using an existing instrument or store of value such as a bank account although the term is sometimes used to describe only those payments that are not from a bank account.

### **2.3 Empirical Evidence**

There is a controversy about the term financial inclusion and how it affects the poor. Poverty reduction is considered one of the main factors behind the development of a country (Essegbey & Frempong, 2011). The poor in developing countries find it expensive and difficult to save, few banks are interest in their savings and in providing services for them. As a result those people cannot accumulate money to invest (Khavul & Bruton, 2013). However, it is estimated that the majority of people who have no access to financial services will have access to electronic payment instruments (Pickens, Porteous, & Rotman, 2014). There is a discussion towards the issue whether mobile money have led or not to financial inclusion.

Pickens (2009) observed that users often keep a balance on their mobile money accounts, thereby using the system as a rudimentary bank account despite the fact that the system does not provide interest. Vaugh, (2007) also noted that some individuals stored money in mobile money accounts for safety considerations, especially with moving around with money. Consumers, vendors, and financial institutions can transfer mobile money, denominated in either local currency or mobile minutes, easily and with low transaction costs. Because mobile money is a cheaper, safer, and more convenient way to transfer funds, and reduces the costs associated with saving and lending, consumers in developing countries are recognizing its benefits. Like the microfinance institution model pioneered by Grameen Bank in the 1970s, mobile money has increased access to financial services. Working together, mobile money and MFIs can expand access to financial services in developing countries (Mas & Rawcynski, 2009)

Morawczynski, (2009) examined the adoption, usage and outcomes of mobile money services using the case of M-PESA in Kenya. From his findings, he noted that since being launched in 2007, the service has seen phenomenal growth in Kenya. Over 7.5 million users, or 34% of the adult population, have registered with M-PESA. The analysis was presented from two perspectives. First, the socio-technical systems framework was used to present M-PESA as a complex system rather than an isolated application. This perspective made it clear that M-PESA grew rapidly because it had a dedicated team of system builders. These individuals took numerous strategies to enroll the element and maintain the stability of the entire system. They further worked to engineer the social, economic, legal and political environments of the technology. The analysis showed that a whole industry for mobile money developed as a result of M-PESA's success.

The factors influencing the adoption of mobile banking services at the bottom of the Pyramid in South Africa was studied in 2010 (Masinge, 2010). Masinge finds that with the convergence of banking services and mobile technologies, users are able to conduct banking services at any place and at any time through mobile banking. This Study examined the factors influencing the adoption of mobile banking by the Bottom of the Pyramid (BOP) in South Africa, with a special focus on trust, perceived cost and perceived risk including the facets of perceived risks: performance risk, security/privacy risk, time risk, social risk and financial risk.

Erickson (2010) did a study on mobile money: cell phone banking in developing countries. He established that transfer can be either done in local currency or mobile minutes and this increase access to financial services. Microfinance institutions in particular can benefit from the use of mobile money. He indicated that regulatory and initial investment barriers can prevent widespread adoption of mobile money(Eriksson, 2010). He demonstrates that mobile money can serve as a poverty reduction tool by increasing savings rates, creating jobs, and increasing access to financial

products offered by microfinance institutions. Based on the potential benefits of mobile money, he recommended that governments subsidize the development of local mobile money infrastructure and adopt policies that enable the formation of a decentralized network of trusted mobile money agents. Sosu (2017), in his study “Mobile money in Ghana: financial inclusion enabler”, the regression and correlation analysis of the study pointed out that there is relatively strong relationship between financial inclusion and mobile money. Nevertheless, it wasn’t the only significant determinant of financial inclusion as inflation rate has also been showed to be a major determinant of financial inclusion in Ghana.

## CHAPTER THREE

### METHODOLOGY

#### 3.0 Introduction

This chapter discusses the methods employed in this study. The chapter focuses on the study design employed, population from which the sample will be drawn, including the sampling technique and size, data collection methods, data analysis and ethical consideration taken in conducting the research.

#### 3.1 Study Design

A study design is the general or overall plan of a research. It is concerned with how the researcher goes about answering the research questions by way of knowing what data to gather, the source of data, the intent behind it and the justification of that particular research design decision (Saunders, Lewis, & Thornhill, 2007). There are several options available in social research but the choice of approach depends largely on the objectives of the study. The study used a cross-sectional design, and data was collected through the survey method. The survey is more appropriate for a piece of research in which the individual is studied as a unit of analysis and particularly for measuring individual characteristics (Oppenheim, 1996). It provides a fast, efficient and accurate means of assessing information on a population, especially when the entire population cannot be covered in a single study (Thomas, 2003).

The study adopted a descriptive research method in assessing the influence of mobile money on financial inclusion. The use of the descriptive method provided the opportunity for the researcher to gain valuable insight into the current status of the phenomenon with respect to the variables under consideration. The two main approaches to conducting a descriptive research are the

quantitative and the qualitative approaches (Yates, 2004). Quantitative research is explaining the phenomena by collecting numerical data that are analyzed using mathematically based methods. It is usually applied in the natural sciences and useful for data of numeric nature (Aliaga & Gunderson, 2002). Questionnaires, surveys, personality tests and other standardized instruments are some of the data collection techniques used under this approach. Qualitative research approach on the other hand has its aim of understanding the aspects of social life that can hardly be studied in quantitative terms, and its method which in general generates words rather than numbers as data for analysis (Patton & Cochran, 2002). Its techniques findings interpretations and conclusions usually reflect the subjective opinion of the researcher. A quantitative research approach was adopted in analyzing the data collected for the study.

### **3.2 Study Population**

Study population refers to the set of individual units or organizations from which a sample is taken (Saunders, Lewis, & Thornhill, 2007). The study population will be the mobile money users within the Awutu-Breku area. The total number of mobile money users within the Awutu-Breku area could not be obtained since the service is open to the general public and the figure is not known as at the time of writing the paper.

### **3.3 Sample Size and Technique**

Sampling is the process of selecting units (people, organizations) from a population of interest so that by studying the sample, you may fairly generalize the results back to the population from which they were chosen (Yates, 2004). A sample is a subset of a population selected to participate in the study, it is a fraction of the whole, selected to participate in the research project (Downey, Hamilton, & Catterall, 2007). It is often impossible to study the entire population because of its size, the availability of the respondents and the fact that resources such as time, funds, etc. are

limited. Researcher therefore selects a sample from the population and carryout the study on the units that are selected.

This study employed the probability sampling method, specifically a simple random sampling technique was used (Kothari, 2004). Due to the nature of the study, the random sampling technique was appropriate in selecting the sample size. The approach was because each user of mobile money had the chance of been chosen for the study. The random sampling technique paves way for each member of the population to be used for the study. With the use of probability sampling, the researcher can specify for each sampling unit of the population the probability that it will be included in the sample.

Sample size determination is one of the most crucial aspects of any research. Selecting a small sample size might undermine the power of statistically tests of significance(Saunders, Lewis, & Thornhill, 2007). In order for a sample size to be acceptable, a sample size must be a representative of the entire population. Due to the fact that the researcher could not obtain the sampling population for the study, the sample size formula was used to select the sample size for the study.

Below is the calculation:

$$\text{Sample Size} = \frac{(Z)^2 * p * (1-p)}{(\text{Margin of Error})^2}$$

Where Z = Value of the Z table at 95% confidence level = 1.96

P = Maximum variability of the population at 50% (0.5)

1-p = Standard Deviation

Margin of Error = 5% or 0.05

Therefore, sample Size

$$\begin{aligned}
 &= \frac{(1.96)^2 * 0.5 * (1-0.5)}{(0.05)^2} \\
 &= \frac{3.8416 * 0.25}{0.0025} \\
 &= 384.16 \quad = \mathbf{384}
 \end{aligned}$$

Based on this calculation, the sample size for the study was 384 mobile money users within the Awutu-Breku locality. However, the researcher could only retrieve 324 questionnaires after the data collection process.

### **3.4 Data Collection Methods**

Data collection refers to the process of extracting data or collecting information for a study. This is mostly aimed at obtaining information for record keeping purposes and decision making purposes. Basically, data is retrieved to provide information regarding a specific topic (Weimer, 1995). There are two main sources of data; the primary data and the secondary data. Primary data are referred to as firsthand data mainly because this data is collected specifically for a purpose by the researcher. The sources of primary data include questionnaires, surveys, interview, experiment and observations. Secondary data are information collected by others for some certain purpose which could be different or similar to that of a researcher who chooses to use the same information (Saunders et al., 2007). The sources of secondary data include journals, fliers, books and from electronic sources.

The tool that was used for the collection of primary data is the questionnaire. A questionnaire is a research instrument consisting of questions for the purpose of gathering information from respondents (Burns & Bush, 2010). The data collection instrument was used because it is not expensive and an easy way to gather data for the research. Questionnaires were used because it is one of the reliable and valid tools for gathering information from targeted respondents for the study. Its use helps for the efficient use of statistical tools for the interpretation of the data gathered. The questionnaires were designed based on the research questions set out to achieve the objectives of the study. The questionnaires were designed under various sections with each section asking probing questions for answering each objective of the study.

### **3.5 Data Analysis Method**

Data analysis is normally used to refer to the process of breaking down data collected into constituent parts in order to obtain answers to research questions, make meaning and develop theory from the collected data (Saunders, Lewis, & Thornhill, 2007). Analysis of data is a process of editing, cleaning, transforming, and modeling data with the goal of highlighting useful information, suggestion, conclusions, and supporting decision making. (Adèr & Helmsing , 2008).

The data collected from the respondents through the use of the questionnaires were first coded using the SPSS Software. After the coding, simple descriptive and various statistical research tools were used in analyzing the responses given respondents to the study.

### **3.6 Ethical Considerations**

The researcher sought consent and explained the objectives of the study clearly for the respondents before information was taken from them. The targeted respondents were not forced to give out information contrary to their will for the study. The information acquired was used for the intended purpose only, so as to ensure the confidentiality of the respondents. All other secondary data and works of others used for the study were duly acknowledged in the study.

### **3.7 Limitation of the Study**

The research faced certain hitches such as difficulties in getting respondents to answer the questionnaires due to the language barrier and the unwillingness of respondents to participate in the study. Furthermore, time and financial constraints affected the selection of a bigger sample size.

**i. Difficulty in collecting data due to the language barrier:** The questionnaire used for the collection of primary data from the respondents was designed in the English Language. Unfortunately, most of the respondents were not fluent in the language which was a limitation since the researcher had to translate the various questions to the language understood by the respondents.

**ii. Time and Financial Constraints:** In the course of conducting the study, the research costs such as printing and data collection affected adversely the research budget. This served as a constraint to the study and limited the scope of the study based on the coverage and the sample size used. The researcher in addition to conducting the study had to devote time to other academic work. This also limited the scope of the study in terms of the area covered and the total number of people used for the study.

## CHAPTER FOUR

### DATA ANALYSIS AND PRESENTATION OF RESULTS

#### 4.0 Introduction

This chapter contains the presentation and analysis of the data gathered from the respondents. The analysis was conducted using descriptive data analysis tools such as frequency tables. The data analysis are also used in the discussion of the objectives of the study.

#### 4.1 Demographic Details of the respondents

**Table 1: Demographic Details of the respondents**

Demographic	Variable	Frequency	Percentage
Age	<20 yrs.	21	6%
	20-25 yrs.	54	17%
	26-35 yrs.	79	24%
	36-45 yrs.	83	26%
	46-55 yrs.	56	17%
	Above 55 yrs.	31	10%
	Total	324	100
Sex	Male	186	57%
	Female	138	43%
	Total	324	100
Academic Qualification	<WASSCE	93	29%
	WASSCE	121	37%
	Diploma	48	15%

	Degree	18	6%
	>Degree	7	2%
	Professional	37	11%
	Total	324	100
<b>Marital Status</b>	Single	196	61%
	Married	88	27%
	Separated	19	6%
	Divorced	14	4%
	Widowed	7	2%
	Total	324	100
<b>Employment Status</b>	Student	76	23%
	Self-Employed	65	20%
	Retired	18	6%
	Employed	98	30%
	Unemployed	67	21%
	Total	324	100

Source: Field Survey (July, 2019)

Table 1 above shows the demographics of the respondents. It can be observed that 26% of the respondents were between the ages of 36-45 years, 24% were between 26-35 years, 17% were between 46-55 years, 17% were also between 20-25 years, 10% were above 10 years whereas 6% were below the age of 20 years. With regards to the sex of the participants, 57% of them were males whereas 43% were females. In relation to the academic qualification of the respondents, 37% of the participants had WASSCE/SSCE as their highest academic qualification, 29% were

either uneducated or had qualifications below WASSCE/SSCE, 15% had diplomas as their highest academic qualification, 11% had professional certificates, 6% had degrees with only 2% having higher than degree academic qualifications.

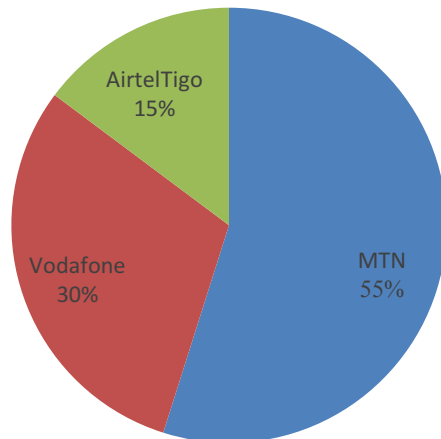
In relation to the marital status, majority (61%) was single, 27% were married, 6% were separated, 4% were divorced whereas 2% were widowed. The employment status of the respondents was also assessed by the researcher; 23% were students, 20% were self-employed, 6% were retired, 30% were employed whereas 21% were unemployed. The feedback shows that mobile money usage involved people with diverse demographics such as age, sex, academic qualification and marital status. The demographics also show that the respondents were people from all sorts of areas with different backgrounds which ensured the study covered individuals from all backgrounds.

## **4.2 Status of Mobile Money Usage and Network Subscription**

### **4.2.1 Network Used**

The figure 1 below demonstrates the feedback from the participants on the mobile network they used for the conduction of their mobile money activities.

□



**Figure 1: Network Used**  
**Source: Field Survey (July, 2019)**

Figure 1 above shows the mobile network usage of the participants to the study. It can be observed from the figure that majority (55%) of the respondents used MTN in the conduction of their mobile money activities, 30% indicated they used Vodafone whereas 15% indicated they use AirtelTigo in the conduction of their mobile money transactions.

#### 4.2.2 Services Used on Mobile Money

**Table 2: Services Used on Mobile Money**

Services	Frequency	Percentage
<b>Transfer/Receive Money</b>	324	100%
<b>Pay Utility Bills</b>	39	12%
<b>Top up Airtime</b>	189	58%
<b>Pay for Product Bought</b>	56	17%
<b>Bank Transaction</b>	21	6%
<b>Others</b>	131	40%

**Source: Field Survey (July, 2019)**

Table 2 above presents the services used by the respondents on the mobile money platform. The table revealed that all the respondents indicated they used mobile money in the transfer/receiving of money, 12% indicated they use mobile money in the payment of utility bills, 58% indicated they use mobile money to top up their airtime, 17% used mobile money to pay for products they bought, 6% indicated they conduct various bank transactions with mobile money whereas 40% indicated they use mobile money for other activities such as savings, acquiring loans and the making donations.

#### 4.2.3 Frequency of Mobile Money Services Usage

Table 3 below shows how frequent the various services are used by the respondents contacted.

**Table 3: Frequency of Mobile Money Services Usage**

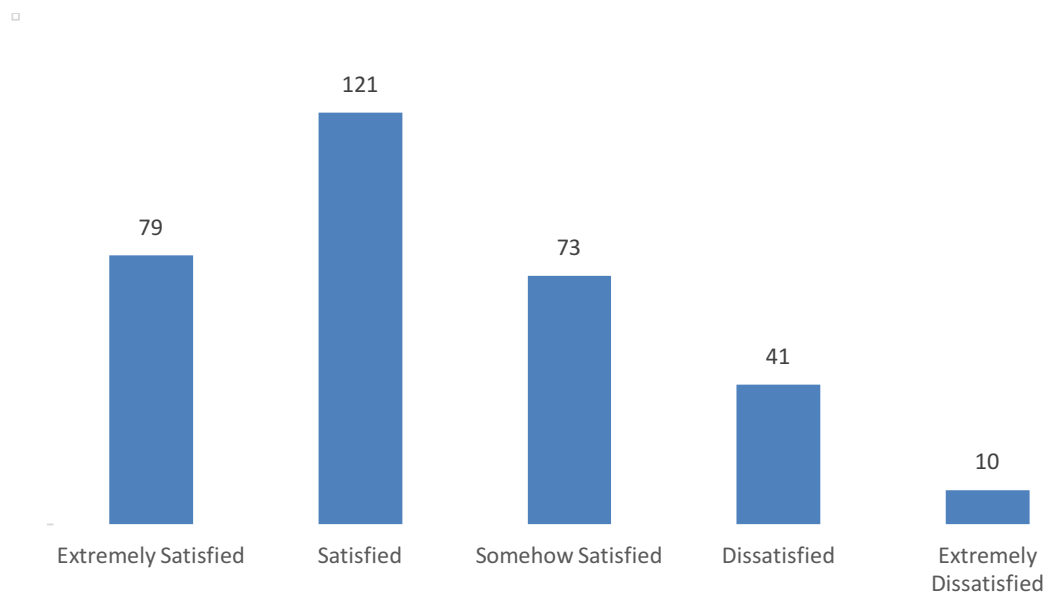
Statement	Never		Once		Twice		Thrice		More than Thrice	
	F	P	F	P	F	P	F	P	F	P
<b>Transfer/Receive Money</b>	0	0%	0	0%	0	0%	15	5%	309	95%
<b>Top up Airtime</b>	49	15%	67	21%	19	6%	46	14%	143	44%
<b>Pay Utility Bills</b>	271	84%	14	4%	11	3%	7	2%	21	6%
<b>Pay for Items</b>	186	57%	59	18%	19	6%	4	1%	56	17%
<b>Bank Transactions</b>	297	92%	6	2%	0	0%	0	0%	21	6%

Source: Field Survey (July, 2019)

It can be observed from table 3 above that the respondents frequently use mobile money to either transfer or receive money and top up airtime. Specifically, all the respondents indicated they have used mobile money to either transfer or receive money more than thrice whereas 44% of the respondents indicated they frequently use mobile money to top up airtime. On other hand, the feedback showed that the payment of bills, payment of items and the usage of mobile money for bank transactions were not frequently done by the respondents. Specifically, 84% indicated they have never used mobile money to pay bills, 57% indicated they had never used mobile money to pay for items and 92% indicated they had not used mobile money to conduct bank transactions.

#### 4.2.4 Satisfaction Level with Mobile Money Services

The figure 2 below shows the satisfaction level of the participants with mobile money activities.



**Figure 2: Satisfaction Level with Mobile Money Services**

Source: Field Survey (July, 2019)

Figure 2 above represents the satisfaction level with mobile money services as indicated by the participants. It can be observed from the figure that 37% of the respondents were satisfied with the mobile money services they receive, 24% were extremely satisfied, 23% were somehow satisfied, 13% were dissatisfied whereas 3% were extremely dissatisfied. The response indicates that the participants were mostly satisfied with the mobile money services they receive.

### 4.3 Influence of Mobile Money on Financial Inclusion

This section of the analysis assesses the feedback from the participants on how the usage of mobile money helps them to assess basic financial services.

#### 4.3.1 Management of Money

The table 4 below shows how the respondents manage their money.

**Table 4: Management of Money**

<b>Response</b>	<b>Frequency</b>	<b>Percentage</b>
<b>Save it at Home</b>	83	26%
<b>Save it with a Bank</b>	67	21%
<b>Save it with Mobile Money</b>	178	55%
<b>Don't Save</b>	23	7%
<b>Others</b>	101	31%

**Source: Field Survey (July, 2019)**

Table 4 above presents the feedback of the respondents on how they manage their money. It could be observed that majority (55%) of the respondents indicated they save their monies with mobile money, 26% indicated they save their monies at home, 21% indicated they save their monies with the bank, 7% indicated they don't save their monies whereas 31% indicated they manage their monies through other forms such as the usage of susu and unions to save their monies. The role

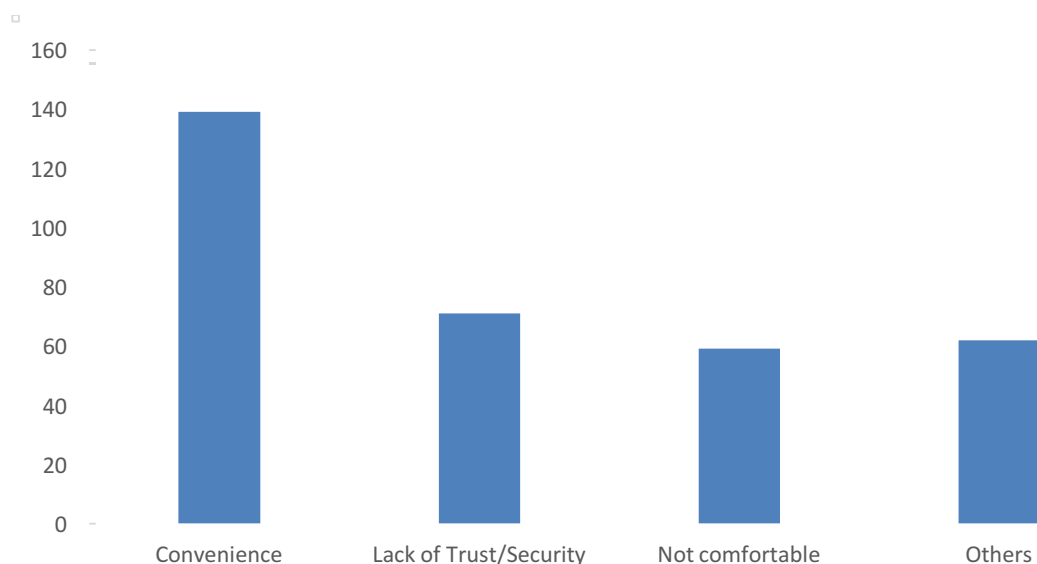
played by mobile money in the management of money is evident in the responses of the participants with most of them using the mobile money services to keep their monies safe.

The respondents mostly indicated that their means of managing their money does meet their financial needs. Specifically, 61% representing 198 of the participants indicated their means of managing money does meets their financial needs with 39% representing 126 indicating otherwise.

This implies that saving of monies with mobile money which is mostly done by the participants does help them to meet their financial needs based on the feedback.

#### 4.3.2 Bank Account Ownership

The respondents contacted mostly indicated they did not own bank accounts. Specifically, 74% representing 241 of the respondents indicated they did not own bank accounts with the remaining 83 representing 26% indicating they own bank accounts. The respondents that did not own bank accounts gave various reasons for not owning bank accounts which is presented in the table below.

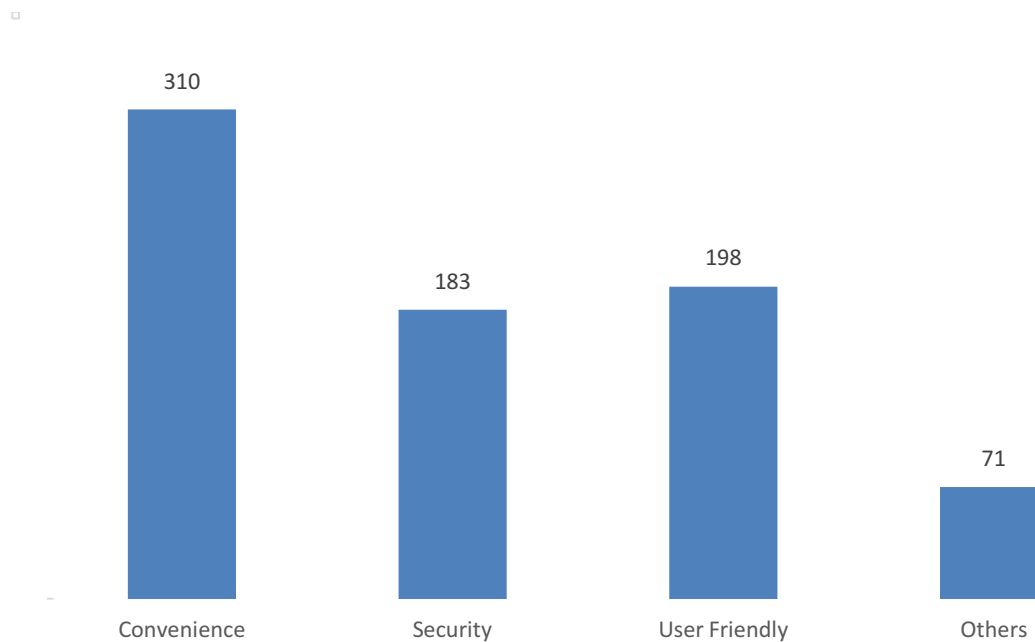


**Figure 3: Reasons for Non-Ownership of Bank Accounts**

**Source: Field Survey (July, 2019)**

Figure 3 above shows that majority (58%) of the respondents did not own bank accounts due to convenience, 29% did not own bank account due to lack of trust or security in the banks, 24% indicated they were not comfortable with banks whereas 26% also indicated they did not own bank accounts due to other reasons such as the minimum requirements of the banks, the requirements for bank account ownership, interest on loans and savings and the location and availability of banks within their area.

#### 4.3.3 Reason for using mobile Money



**Figure 4: Reason for using mobile Money**

**Source: Field Survey (July, 2019)**

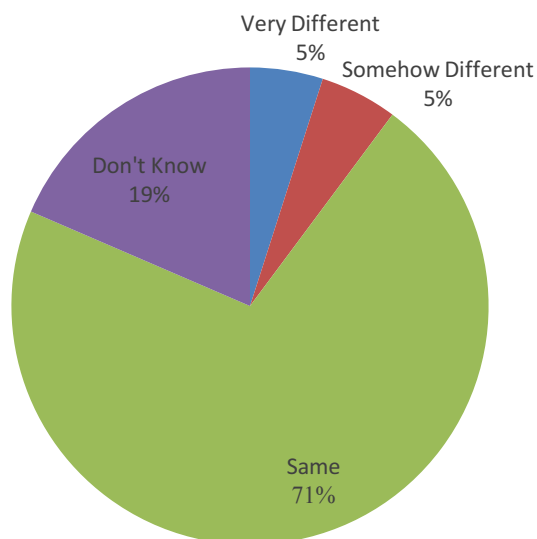
Figure 4 above presents the reasons given by the respondents for the usage of mobile money. It could be observed that convenience was the prime reason for the usage of mobile money by the respondents followed by it being user friendly, security and other reasons. Other reasons given by

the participants for using mobile money as its availability and the ability top assess the money at most hours of the day.

The users of mobile money that were contacted mostly indicated money money services did meet their financial needs. Specifically, 76% representing 247 respondents indicated mobile money services did meet their financial needs with the remaining 24% representing 77 indicating mobile money services did not meet their financial needs.

As to whether mobile money services were different from the services of banks, the figure below demonstrates the feedback from the respondents.

□



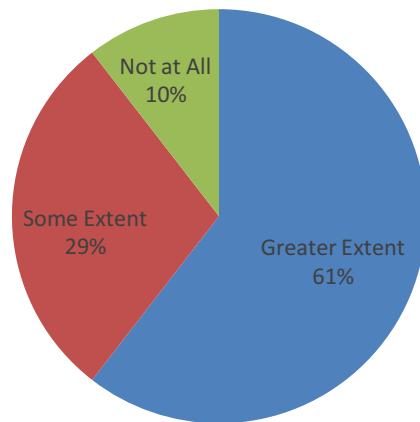
**Figure 5: Difference between Mobile Money and Bank Services**

**Source: Field Survey (July, 2019)**

Figure 5 above shows that 71% of the respondents indicated mobile money services were the same as bank services, 19% indicated they had no idea, 5% indicated they were somehow different while 5% indicated they were very different. It is obvious from the feedback that mobile money services are the same as bank services based on the feedback of the respondents.

On whether or not mobile money addresses the issue faced in the usage of bank services, the figure below demonstrates the feedback of the respondents.

□



**Figure 6: Extent to which Mobile Money Address the Issue with Bank Services**

**Source: Field Survey (July, 2019)**

Figure 6 above shows that majority (61%) of the respondents indicated to a greater extent mobile money services address the issue faced with the usage of bank services, 29% indicated to some extent mobile money solves the issue faced with the usage of bank services and 10% indicated mobile money does not address the issue faced with the usage of banks.

The table below shows the feedback of the respondents on the effect of mobile money on the financial inclusion.

**Table 5: Role played by Mobile Money on Financial Inclusion**

Statement	Strongly Disagree		Disagree		Not Sure		Agree		Strongly Agree	
	F	P	F	P	F	P	F	P	F	P
<b>Helps access financial services</b>	0	0%	7	2%	25	8%	121	37%	171	53%
<b>secured and convenient</b>	12	4%	27	8%	9	3%	113	35%	163	50%

Source: Field Survey (July, 2019)

Table 5 above shows the response of the participants on how mobile money services affect their access to financial services. It can be observed that majority of the participants indicated they agree mobile money usage helps them to assess various financial services with most of the respondents also indicating mobile money is convenient and secured.

#### 4.4 Challenges of Mobile Money Usage

**Table 6: Challenges of Mobile Money Usage**

Statement	Strongly Disagree		Disagree		Not Sure		Agree		Strongly Agree	
	F	P	F	P	F	P	F	P	F	P
<b>Fraud</b>	33	10%	41	13%	64	20%	97	30%	89	27%
<b>Delay in Payments</b>	39	12%	142	44%	46	14%	71	22%	26	8%
<b>Security</b>	113	35%	147	45%	28	9%	29	10%	7	2%
<b>Convenience</b>	143	44%	119	37%	21	6%	21	6%	20	6%
<b>PIN Loss</b>	59	18%	63	19%	32	10%	39	12%	131	40%
<b>Loss of transferred money</b>	31	10%	257	79%	15	5%	16	5%	5	2%
<b>understanding options</b>	213	66%	85	26%	3	1%	14	4%	9	3%
<b>Limits on transactions</b>	23	7%	57	18%	5	2%	79	24%	160	49%
<b>Bad customer services</b>	169	52%	49	15%	41	13%	41	13%	24	7%
<b>Complicated menu</b>	198	61%	92	28%	3	1%	22	7%	9	3%

Source: Field Survey (July, 2019)

Table 6 above presents the various challenges faced with mobile money usage and the response given by the participants. It can be observed from the table that the challenges indicated by the participants as those been faced in their usage of mobile money were Fraud, PIN loss and the various limits kept on transactions using mobile money services. On the other hand, the challenges that are not significant or mostly faced by the respondents were delay in payments, security, convenience, loss of transferred money, difficulty in understanding options, bad customer service and complicated menu. Other challenges faced by as indicated by the respondents include personification and various network hitches associated with mobile networks.

## **4.5 Discussion of Results**

### **4.5.1 Status of Mobile Money Usage and Subscription**

Mobile money usage has been on the rise in the past years with studies and reports showing an increase in the usage of its services. The findings of the study showed that MTN is the preferred mobile money network for the users (*See Figure 1*). This observation is consistent with the CGAP report (2016) which indicated that MTN mobile services was mostly preferred and used than the other mobile network services in the country. In relation to the services used on the mobile money platform, respondents mostly use mobile money for the transfer/receiving money and top up airtime. The study proved that users of mobile money frequently transfer/receive money with mobile money and top up airtime. With the satisfaction level of the participants with mobile money services, the findings of the study proved that the respondents were satisfied with the mobile money services. The findings of the study on the usage and subscription of mobile money services are consistent with current trend of mobile money usage within the country as indicated by various studies.

#### **4.5.2 Influence of Mobile Money on Financial Inclusion**

Financial inclusion is considered as one of the significant aspects where by individuals have access to financial services. However, the limited numbers of financial service institutions, strict requirements and other factors have made the access of such financial services difficult and inadequate. Various studies have given different views through which mobile money helps individual to access financial services. Mobile money users gave reasons such as convenience, security and user friendly as reasons for them using mobile money (See Figure 4). The users indicated the services offered by mobile money does meet their financial needs whiles indicating the mobile money services offered and the of the bank services are the same (See Figure 5).

The respondents indicated that to a greater extent the service provided by mobile money does address the issues faced with the accessing of bank services (See Figure 6). On the role played by mobile money in financial inclusion, the findings of the study showed that it helps to get access to financial services and is more secured and convenient (See Table 5).

#### **4.5.3 Challenges in Accessing Mobile money Services**

Despite the importance and role played by mobile money, it is mostly faced by different challenges. The study showed that the challenges faced by the user of mostly were various issues of fraud, PIN loss and the limits that are kept on mobile money transactions (See Table 6). Other challenges such as network hitches and personification are also faced by the users of mobile money users. Despite the challenges the feedback shows that mobile money plays significant role in financial inclusion.

## CHAPTER FIVE

### SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

#### 5.0 Introduction

This chapter will take into the consideration the summary of the study. It will elaborate on the various chapters and the various findings of the study. The chapter will also cover the suggestions or recommendations made by the researcher.

#### 5.1 Summary

The study aimed to assess the contribution of mobile money on financial inclusion. The study was conducted within the Awutu-Breku area of the Central Region of Ghana. The study specifically sorts to assess the nature of mobile money usage and subscription within the Awutu-Breku area, assess the effect of mobile money on financial inclusion in Ghana and the challenges faced in the accessing of mobile money services. A descriptive research design was adopted in assessing the influence of mobile money on financial inclusion. The population of the study was the users of mobile money within the Awutu-Breku area. A simple random sampling technique was used in selecting the respondents for the study. The sample size for the study was 324 mobile money users. The respondents were mostly between the ages of 26-45 years with majority (57%) been males. Respondents with WASSCE their highest educational qualification was the highest with those with academic qualifications higher than degrees been the least. With regards to the marital status of the respondents, 61% of them were single, 27% were married, 6% were separated, 4% were divorced whereas 2% were widowed. With the employment status of the respondents, 23% were

students, 20% were self-employed, 6% were retired, 30% were employed whereas 21% were unemployed.

The respondents indicated that MTN mobile money was preferred to other network companies while the services that they mostly use are the transferring and receiving of money and for topping up airtime. The mobile money platform is frequently used in the transferring and receiving of money and the topping of airtime. Most of the respondents were satisfied with the mobile money services with most indicating mobile money helps address the issues they face with the usage of banks. Furthermore, the respondents indicated that they do not own bank accounts due to reasons such as convenience, lack of trust or security, not comfortable with the bank and requirements for bank account ownership. They indicated that they use mobile money due to convenience, security and its user friendly nature. With regards to the services offered by mobile money, the findings of the study showed that they were the same as that of banking services. With the help of mobile money, the responses indicated they have access to financial services and described mobile money services as secured and convenient. The challenges mostly faced by mobile money users are fraud, PIN loss, limits on transactions and various network hitches.

## **5.2 Conclusions**

The study sort to assess the role played by mobile money on financial inclusion. With relation to the mobile network used mostly by the respondents, MTN was the preferred network used and the study found that mobile money was mostly used by respondents due to its convenience, user friendly nature and its security. The findings of the study showed that mobile money helps its various users to get access to financial services thereby impacting on financial inclusion. Thus, users who don't own bank accounts indicated mobile money helps solve the issues faced with the usage of bank services. However, the study found out that the users of mobile money faced various

challenges such as issues of fraud, PIN loss and the limits that are kept on mobile money transactions.

### **5.3 Recommendations**

Based on the summary and conclusion given above, the following recommendations are proposed for suggestion:

- The main issue faced by users of mobile money is the PIN loss and Fraud activities, based on this, more security measures should be added to the mobile money platform in order to solve the issue of fraud and PIN loss.
- Government should regulate the mobile money service within the country since it contributes hugely to the financial inclusion.
- Stakeholder analysis should be made by the necessary regulatory body to find ways and means of enhancing the mobile money platform.
- Further investigations should be done in other parts of the country to appreciate fully the importance of mobile money to financial inclusion within the Ghanaian financial system.

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## APPENDIX

### QUESTIONNAIRES FOR MOBILE MONEY CUSTOMERS

I am a final year student of the University of Ghana Business School, pursuing a Masters in Developmental Finance. I am conducting a research as part of requirements to qualify to graduate. This questionnaire forms part of a study titled “*The Contribution of Mobile Money to Financial Inclusion within the Ghanaian Financial Sector*”. Information provided will be kept confidential and used only for the purpose of this study. Thank you in advance for your cooperation and participation.

#### **Personal Details**

1. Age <20 [ ]      20-25 [ ]      26-35 [ ]      36-45 [ ]      46-55 [ ]      >55 [ ]

2. Sex                      Male [ ]                      Female [ ]

3. Academic Qualification <WASSCE [ ]                      WASSCE [ ]                      Diploma [ ]  
Degree [ ]                      >Degree [ ]                      Professional [ ].

4. Marital Status Single [ ]                      Married [ ]                      Separated [ ]                      Divorced [ ]  
widowed [ ].

5. What is your employment status?

Student [ ]      Self-Employed [ ]      Retired [ ]      Employed [ ]      Unemployed [ ]

#### **Status of Mobile Money Usage and Network Subscription**

6. Which of the following mobile networks do you use? (Please select as many as applicable)

MTN [ ]                      Vodafone [ ]                      AirtelTigo [ ]

7. Which of the following services do you use on mobile money? (Please tick as many as applicable).

Transfer/Receive Money [ ]                      Pay Utility Bills [ ]                      Top up Airtime [ ]

Pay for Products Bought [ ]      Bank Transactions [ ]

Others [ ], please specify .....

How frequent do you use any of the following mobile money services within a week.

Statement	Never	Once	Twice	Thrice	More than Thrice
8. Transfer/Receive Money					
9. Top up Airtime					
10. Pay Utility Bills					
11. Pay for Items					
12. Bank Transactions					

13. How satisfied are you with the services you receive from the mobile money providers?

Extremely Satisfied [ ]      Satisfied [ ]      Somehow Satisfied [ ]

Dissatisfied [ ]      Extremely Dissatisfied [ ]

**Influence of Mobile Money on Financial Inclusion**

14. How do you manage your money?

Save it at home [ ]      Save it with a bank [ ]      save it with mobile money [ ]

don't save [ ] others (please specify).....

15. Do you own a bank account?      Yes [ ]      No [ ]

16. If no, why don't you use a bank account?

Convenience [ ]      Lack of Trust/Security [ ]      Not comfortable walking into a bank [ ]

Others (Please specify).....

17. Does your means of managing your money meets your financial needs?

Yes [ ]      No [ ]

18. Why do you use mobile money? Convenience [ ] Security [ ] User friendly [ ]  
 others (please specify).....

19. Does mobile money services meet your financial needs? Yes [ ] No [ ]

20. How different is mobile money services from bank services? Very different [ ]  
 Somehow different [ ] same [ ] Don't know [ ]

21. Does mobile money services address the issues you have with using a bank and managing your money? Greater extent [ ] Some extent [ ] Not at all [ ]

Please tick the right response to the following statements.

Statement	Strongly Disagree	Disagree	Not Sure	Agree	Strongly Agree
22. Mobile money helps me access financial services					
23. Without mobile money, I would not have been able to access to various financial services					
24. Mobile money is secured and convenient					

**Challenges of Mobile Money Usage**

Please tick the appropriate response to the following statements on the challenges of mobile money.

Statement	Strongly Disagree	Disagree	Not Sure	Agree	Strongly Agree
26. Fraud					
27. Delay in Receiving/Making Payments					
28. Security					
29. Convenience					
30. PIN Loss					

31. Loss of transferred money					
32. Options are not understandable					
33. Limits on transactions					
34. Bad customer services					
35. Complicated menu					

36. What other challenges do you face apart from the ones above?

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37. Suggest various ways of dealing with the challenges above.

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