UNIVERSITY OF GHANA

MOBILE MONEY ADOPTION IN EMERGING MARKETS: A CASE OF GHANA

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THIS THESIS IS SUBMITTED TO THE UNIVERSITY OF GHANA, LEGON IN THE PARTIAL FULFILMENT OF THE REQUIREMENT FOR THE AWARD OF MPHIL MARKETING DEGREE
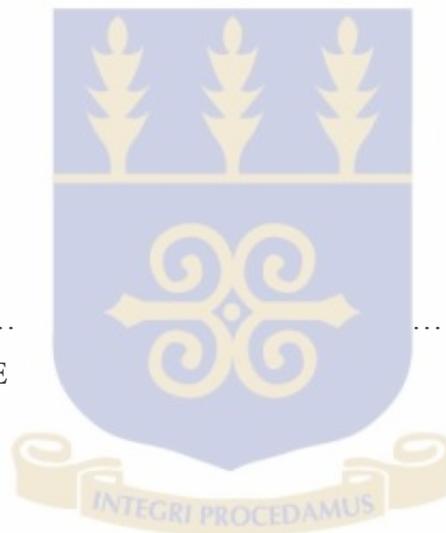
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DECLARATION

I do hereby declare that this work is the result of my own research and has not been

presented by anyone for any academic award in this or any other university. All references

used in the work have been fully acknowledged.

I bear sole responsibility for any shortcomings.

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CERTIFICATION

I hereby certify that this thesis was supervised in accordance with procedures laid down by the University.

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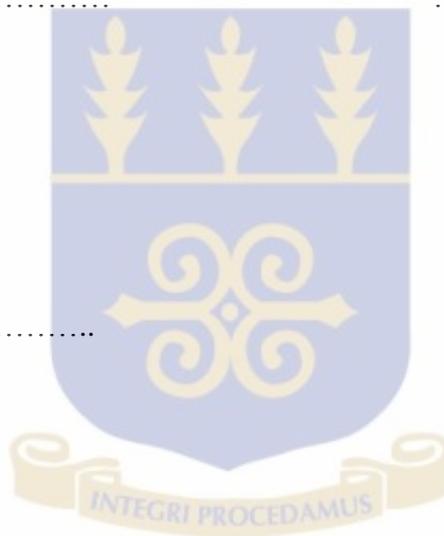
DEDICATION

This work is dedicated to my wife, Mrs. Phyllis Nana Akua Bampoe, who has been a constant source of support and encouragement during the challenges of graduate school and life. I am truly thankful for having you in my life. This work is also dedicated to my children, Duane and Dionne Bampoe.

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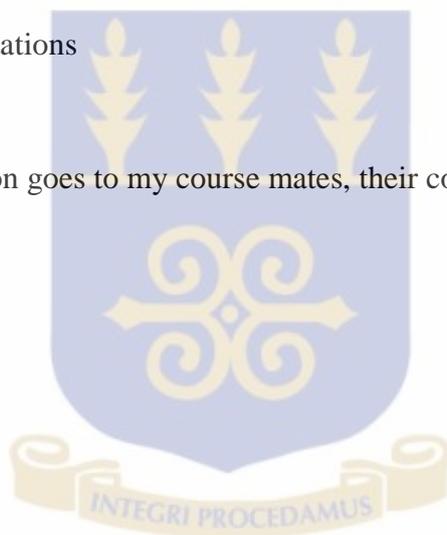
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ABSTRACT

The adoption and widespread use of mobile phones in emerging markets have opened up diverse opportunities in financial services such as mobile money transfer. However, mobile money transfer is at different stages of adoption in emerging markets. The main objective of the research was to identify factors that influence consumers' intention to adopt mobile money transfer in Ghana. A conceptual research model was developed based on the Unified Theory of Acceptance and Use of Technology (UTAUT). The model predicted that Perceived Usefulness (PU), Perceived Ease of Use (PEOU), Perceived Cost (PC), Perceived Risk (PR), Perceived Trust (PT), Social Influence (SI), Competitive Intensity (CI) could affect behavioural intention to adopt to mobile money. A combination of qualitative and quantitative approaches was employed for this study. The heads of the three mobile money operators were interviewed to understand the operations of mobile money echo system. 320 mobile money users were conveniently selected in Accra to understand questions on their intention to adopt the system. Cross administration case synthesis and hierarchical regression were used for analysing the approaches respectively. Findings revealed that adoption of mobile money transfer in Ghana is affected by factors as perceived usefulness, perceived trust, social influence and competitive intensity. The study also controlled for the effects of age and income on the factors and intention to use mobile money. All these variables established a positive relationship with behavioural intention. It is recommended that different parties of interest for mobile money in Ghana and mobile money providers recognize the need of the factors that affect customers' intention to use mobile money and this should be put into consideration, so as to increase its use and encourage its general acceptance.

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

The adoption and widespread use of mobile phones globally has been recorded in literature as the most significant growth of consumer level technology (Porteous, 2006; Overa, 2006; Hughes and Lonie, 2007; Abraham, 2007; Jensen, 2007; Orozco et al. 2007; Hwang et al, 2007; Merrit 2010;Hinson 2010; Boateng, 2011,Jack & Suri, 2011; Mbiti & Weil, 2011; Mahatanankoon et al. 2005). According to the International Telecommunication Union, mobile phone subscribers currently constitute 5.9 billion, the global penetration reaches a staggering 87% in general and 79% in the developing world (ITU, 2011a). By the end of 2008, Africa had 246 million subscription, and mobile penetration had risen from just 5 percent in 2003 to well over 30 percent in 2008 (Dogbevi, 2010).

The ubiquitous characteristic of the mobile technology and its applications makes it an essential developmental tool to meet social challenges and leapfrog the development of basic services in the emerging economies (Leung & Wei, 2000; Tiwari et al., 2006). One of such challenges is access to financial services in the developing economies. Beshouri and Gravr\aak (2010) projected that the total number of people with a mobile phone, but no access to banking services will reach 1.7 billion by the end of 2012.According to the World Bank (2012), globally, more than 2.5billion adults do not have a formal bank account, most of them in developing economies. Only 41 percent of adults in the developing countries have a formal bank account. In Africa, only 20 percent of families have bank accounts. The majority of these people are rural dwellers in developing countries. The reasons for not having a bank account is the lack of money to use one, bank accounts are too expensive, banks are too far away(especially in rural areas), documentation is lacking, and people do

not trust banks(1TU, 2013). Thus, mobile money was developed as a means of making financial services available to the unbanked (Porteous, 2006).

The mobile money transfer (MMT) is an innovative device from an aspect of an electronic payment and banking industry referred to as mobile banking(Orozco,2003, Orozco et al,2007).According to Tobbin (2011), mobile money transfer has not been well defined in various studies. However, in his literature, Tobbin (2011) defines MMT as all the various activities (long-distance remittance, micro-payments, and informal air-time battering schemes) that bring financial services to the unbanked using mobile technology. Mbiti et al, (2011) and Jenkins, (2008) said it is an innovation to transfer money using the information and communication technology of the Mobile Network Operator

The MMT services has become quite significant in emerging economies like Ghana as a result of remittances and remote payments which are the most common uses of mobile money in developing countries (ITU, 2013).The constant migration and increase in urbanisation means that the need for money transfer, the informal methods of remitting funds within Ghana to families and relatives are quite established. These have increased as well with diverse difficulties and challenges such as individuals carrying money on themselves or sending drivers and conductors who became susceptible to highway robberies and thefts(Kim et al.,2010;Hughes & Lonie,2007).Money sent through friends and relatives is sometimes misused and never reaches destination(Sander,2003).With regards to the formal system, challenges associated with it include delays and long queues, network failure and unreliable communication(Au & Kauffman,2008).As a result of these challenges, the primary function of MMT is to reduce the costs of making remittances from one individual to another, especially across large distances(World Bank, 2012) .

According to the Migration Development Brief of the World Bank, remittance flows to developing countries were estimated to have reached USD 372 billion in 2011, and are expected to reach USD467 billion by 2014, and total worldwide remittance flows are expected to reach USD 615 billion by 2014.India and China rank highest as recipients of migrant remittances, to the tune of USD 64 billion and USD 62 billion respectively. Tajikistan and Lesotho receive remittances that are as high as 31 percent and 29 percent of GDP respectively

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Despite all these significant figures, the mobile money transfer is at different stages of implementations in emerging economies. Countries noted in various literatures are Philippines, South Africa, Kenya Tanzania, Ghana, Uganda and Nigeria. Whilst Safaricom's M-pesa has been hugely successful in Kenya, where nearly two million users registered with the system within a year of its nationwide rollout (Ivatury & Mas,2008;Vaughan,2007).M-pesa now provides services to 15 million Kenyans(more than a third of the country's population)and serves a conduit for the fifth of the country's GDP and processes more transactions domestically within Kenya than Western union does globally, providing more banking facilities to more than 70 percent of the country's adult population. In Philippines, three million customers use systems offered by mobile operators Smart and Globe (infoDEV, 2006); in South Africa, where 450,000people use Wizzit ('the bank in your pocket') (Ivatury &Pickens, 2006) or one of two other national systems (Porteous, 2007); in Ghana, active mobile money customers registered with the three mobile operators, Airtel, Tigo and MTN as of 2014 is 2,369,997(www.bog.gov) .

These variations indicate that the acceptance, usage and adoption of similar implementations in Philippines, South Africa and particularly Ghana have not enjoyed similar success as

compared to Kenyan's M-pesa. Camner et al., (2009) and Merritt (2011) also assert that the diffusion of mobile money has had varied adoption rate in different countries and communities.

1.1 Research Problem

The adoption of mobile money services in emerging economies is particularly important because increased financial access can have a positive impact on long term economic growth through reducing poverty and income inequality (Clarke, 2002; Beck et al., 2004; Levine, 2005).

According to a world bank report, over 2.5 billion adults do not have a formal bank account, and yet about 6 billion people have access to mobile phones (86 percent penetration rate) (ITU, 2011; Demirguc-Kunt & Klapper, 2012, 11). Most of the unbanked population resides in the developing regions of the world such as Sub-Saharan Africa where only 24 percent of the adults have a formal bank account. However, the region has a mobile phone penetration rate of over 60 percent, which provides a readily-available platform to roll out mobile money services (Demirguc-Kunt & Klapper, 2012, GSMA, 2011)

Today, Kenya, where the M-Pesa mobile money transfer has been successful stands as a world leader in the provision of mobile money services with about 19.5 million service users and an annual transaction volume of about KES 672.3 billion (US$ 8 billion) or 24 percent of Kenyan Gross Domestic Product (GDP) (CCK Report, 2012). Indeed, of the about 100 million users of mobile money around the world, one in five is Kenyan (Juniper Research, 2011).

Apart from the above benefit, scholarly literature on mobile money transfer has identified a number of benefits, including facilitating transactions (Mas & Radcliffe, 2010; Jack & Suri, 2011a), increasing money circulation in the economy (Demombynes & Thegaya, 2012), enhancing money security (Plyler et al., 2010), facilitating social capital accumulation (Plyler et al., 2010; Morawczynski, 2008), creating employment opportunities (Plyler et al., 2010), reducing economic vulnerability (Jack & Suri, 2011), fostering entrepreneurship (Kendall, et al., 2012), increasing savings (Demombynes & Thegaya, 2012), and promoting financial autonomy (Morawczynski, 2009; Jack & Suri, 2011a).). These many benefits of adopting mobile money and the success of Kenya's M-pesa, has brought about massive deployment of the services across and beyond Africa.

However, no country and for that matter Ghana has managed to match the speed and extent of M-PESA uptake in Kenya. For example, whereas the introduction of mobile money in Kenya had over 2m users within two years, the same deployment saw far less uptake in Ghana and Tanzania (Camnar & Sjöblom, 2009). In June 2009, 14 months after the launch, M-PESA in Tanzania had 280,000 users and 1,000 agents (Rasmussen 2009).

A review of the extant literature on mobile money reveals that not many studies have been conducted and it is in its formative stages (Jenkins, 2008; Porteous, 2006; Hughes & Lonie, 2007) and with the few done, most used Kenya as their template (Acker & Mbiti, 2010; Mbogo 2010; Lester et al., 2010; Mbiti, & Weil, 2011) .Moreover studies conducted on MMT can be categorized into two main mobile technologies related research areas namely mobile payment and mobile banking. Whereas literature on the adoption of mobile banking (Cheng et al,2006;Chen,2008,Cruz et al 2010,Donner & Teller 2008,Medhi et al 2009,Puschel et al 2010,Tobbin,P.2012)) and mobile payment(Fang et al,2005; Wang et

al,2006) although not quite exhaustive, have enjoyed significant attention of many scholars in recent times. However scholarly research on the slow adoption rate of mobile money transfer in Ghana focusing on users' intentions to adopt the service and to remain loyal, to the best of the researcher's knowledge has been non-existent. There is therefore a need, to understand users' slow adoption of mobile money and to identify the factors that influence customers' intention to use mobile money in Ghana. Bhattacherjee et al., (2008) asserts that long-term viability of the service and its eventual success depends on its continued use rather than first-time use. FinAccess (2007) and FinScope (2009) research conducted argued that the unique combination of various conditions enabled Safaricom to effectively deploy the M-PESA scheme, and has encouraged millions of users to rapidly adopt the service. This indicates that the exceptional growth rate of M-PESA in Kenya is a unique phenomenon that may not be repeated in another country. Emerging economies adopting the mobile money transfer imports the M-pesa template. Could this be the result of its slow adoption rate in Ghana? This research will further look to find out why and rather seek to develop dimensions that fit the unique needs of the Ghanaian users.

1.2 Objectives of the Study

Based on the study's problem statement, the following objectives are pursued:

1. To identify the factors that influence customers' intention to use mobile money in Ghana

2. To determine the influence of demographics on behavioural intention

3. To understand user acceptance of mobile money transfer adoption in Ghana

1.3 Research Questions

1. What factors influence consumers' intention to use mobile money in Ghana?

2. What influence has demographics on behavioural intention?

3.   What are the key determinants of user acceptance of mobile money transfer?

1.4 Significance of the Study

This study will contribute to research being conducted in the fields of financial innovation and intermediation. It also provides entrepreneurs, Mobile Network Operators, policymakers, technology developers, development agencies and other mobile banking stakeholders who have the intention of using mobile money as a strategy, a framework for understanding how mobile money services affect businesses and business owners.

It further contributes to scholarship and practitioners in this area by shedding light on why replicating the success of M-PESA, which has helped changed a lot of business practices, aided financial inclusion and also economic growth (Mbogo, 2010) has been met with great challenges, thereby informing the mobile money implementation efforts in developing countries. The insights from this evaluation provide valuable information to all the relevant parties, contributing to their efforts to create an enabling environment for mobile money service deployment, and to enhance the likelihood of more people using mobile money services.

1.5 Scope of the Study

This research focuses on mobile money adoption factors such as perceived ease of use, perceived usefulness, perceived trust, perceived risk, competitive intensity, social influence, perceived cost will facilitate the adoption and hence the use of mobile money transfer in Ghana. The scope of this study also focuses on the three key operators of mobile money transfer in Ghana and other operators who are involved in providing services to users of mobile money.

1.6 Overview of Methodology

A cross sectional descriptive survey design was employed for this research, because according to Neuman (2006) surveys are appropriate for research questions about self-reported beliefs or behaviours, and therefore ask respondents about their beliefs, opinions, characteristics, and behaviours associated with a phenomenon. The study was also descriptive because it emphasizes the in-depth description of the perception and attitude of mobile money users towards their intention to adopt to the system. A combination of qualitative and quantitative approaches will be employed for this study. Qualitatively, the study will rely on interviewing the heads of the three mobile money operators to understand the operations of mobile money echo system. The study will also use a questionnaire for a conveniently 320 mobile money users at the time of data collection to answer questions on their intention to adopt to the system in Accra. Data will finally be organised and processed using Statistical Package for Social Sciences (SPSS) version 16.0. Descriptive statistics and hierarchical regression will also be used.

1.7 Limitations of the Study

Limitations are potential weaknesses or problems with the study identified by the researcher. According to Creswell (2005), the limitations often relate to loss or lack of participants, measurement errors, small sample sizes and other factors typically related to data collection and analysis. The limitation of this study include the sample selection of mobile agents using only one authorised network operator or more than one network operator. This limitation will be mitigated by making sure that there is a careful conveniently sampled operators that provide all the three mobile money transfer services.

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1.8 Chapter Disposition

The study is organized into six chapters. The nature of each chapter is outlined and briefly described below.

Chapter One provides an introduction to the study by highlighting the research context, the research problem, the research objectives and the research questions. It also outlines the contributions of the study and the nature of each chapter.

Chapter Two presents a review of the relevant literature, discussing the various theoretical frameworks, the definition of mobile money, key drivers of mobile money followed by the impact and adoption factors. Mobile Money in Ghana is discussed. The ecosystem, which details the various stakeholders in the mobile money industry is detailed followed by mobile money processes. This section concludes with the conceptual framework forming the basis of the study.

Chapter Three details the context of the study that highlights Ghana as an emerging market. It also gives an overview of the three mobile network operators of mobile money in Ghana.

Chapter Four provides detailed description of the research methods used in undertaken the study's research questions. It also provides a profile of respondents, and the justification for the methodological choices including the data analysis techniques.

Chapter Five focuses on the analyses and discussion of the empirical results. It also presents the major findings of the study discussing the key results of the study in relation to the literature.

Chapter Six outlines the major conclusions of the study. It further outlines the theoretical contributions to academic knowledge, provide a number of managerial implications, and conclude with recommendations for further research.

CHAPTER TWO

LITERATURE REVIEW

2.1 Chapter Overview

Inspired by the success of M-PESA in Kenya, many mobile money services have been deployed over the recent years in the developing economies. Of the approximately 100 mobile money deployments around the world, about 84 percent were launched within the last three years (Donovan, 2012; Juniper Research, 2011; Cobert et al., 2011). Moreover, only handful countries have managed to attain a sustainable scale. This raises two key questions: Why did the service grow so quickly in Kenya? Can the success of M-PESA in Kenya be repeated in other countries like Ghana? This chapter is therefore dedicated to the review of relevant literature in relation to the underpinning theoretical framework of the study, defining mobile money, the key drivers of mobile money transfer, the impact of mobile money, adoption of mobile money, the mobile money ecosystem, which involves a diverse set of stakeholders from both mobile phone operators and financial service institutions and how mobile money transfer stimulate users behavioral intention to adopt the service forming the basis for the conceptual model for the study.

2.2 Theoretical Framework

The slow up-take of mobile money service in countries like Ghana compared to Kenya implies a difference in technology adoption behaviour. This is because the acceptance of mobile phones to store value and the acceptance of electronic money as a means of exchange depend on an individual's behavioural intention towards the use of mobile money technology. Tobbin (2010) asserts that the value of mobile money services can only be realised when consumers embrace and use the innovation (Tobbin, 2010). With

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advancement in technology, many models and theories have been presented in attempt to explain the factors that cause people to accept and use new technologies. Popular among these theories are their extensions to value added mobile services (Barnes and Huff, 2003; Biljon et al, 2008; Carlssson et al. 2006; Chen, 2008; Muk, 2007; Teo & Pok, 2003) The main models advanced in information and communication studies literature include the Technology Acceptance Model (TAM), the Innovation Diffusion Theory (IDT) (Rogers, 2003), and the Unified Theory of Acceptance and Use of Technology (UTAUT) (Venkatesh et al., 2003).

2.2.1 Technological Acceptance Model (TAM)

TAM is an adaptation of Fishbein and Ajzen's Theory of Reasoned Action (TRA) that proposes that behaviour is a direct consequence of behavioural intention, Koenig-Lewis et al. (2010). Most literatures on mobile services show that TAM is the most widely used, validated and replicated theoretical model in the prediction of future consumer behaviour (Luarn& Lin, 2005; Dass & Pal, 2011; Adams et al 1992; Chau & Hu, 2001; Davis & Venkatesh, 1996; Kwon & Chidambaram, 2000; Legris et al, 2003). Davies argues that the intention to use a particular technology is based on a person's behavioural intention which is determined by two beliefs; perceived ease of use and perceived usefulness (Liu & Li, 2009; Sangle & Awasthi, 2011). Many authors have established that the TAM constructs are insufficient in examining a user's acceptance of mobile money services and have employed different extended versions of the model (Nysveen et al., 2005, 330-31; Lule et al., 2012, 33; Luarn & Lin, 2005; Venkatesh & Davis, 2000).

A study by Bagozzi (2007) found that TAM does not take into account the role of group, cultural and social aspects of decision making which are central to technology adoption, and advocates for the model extension. Other studies suggest perceived risk; perceived

credibility, financial cost, self-efficacy, and relative advantage as other factors that affect mobile financial services adoption not covered by the TAM model (Donner & Tellez, 2008; Riquelme & Rios, 2010; Luarn& Lin, 2004; Wang, 2003). The constructs are explained as follows:

Perceived Ease of Use

The perceived ease of use construct refers to the degree to which an individual expects that using a particular system would be free of effort(Liu & Li,2009).Perceived ease of use on the other hand, relates to whether mobile financial services is easy to learn and use (Aldas-Manzano et al,2012a). The results of many of the prior empirical studies have demonstrated that perceived ease of use has a positive correlation with behavioural intention (Davis, 1989; Gefen and Straub, 1997, 2000; Venkatesh, 2000; Venkatesh and Davis, 2000; Gefen, 2003, Zhang & Mao, 2008; Oh & Yoon, 2014; Schierz, Schilke & Wirtz, 2010)

Perceived Usefulness

Perceived usefulness refers to the degree to which an individual perceives that using a particular system would enhance his/her job performance (Liu and Li, 2009).Aldas-manzano et al., (2012a) assert that perceived usefulness refers to the advantages that financial transactions offers and whether using a mobile phone is useful for performing financial transactions. Riquelme and Rios (2010) assert that perceived usefulness plays a significant role in determining the adoption and use of mobile services Wei *et al.* (2009) in their study of mobile commerce in Malaysia found perceived usefulness to be positively associated with consumer's intention to use mobile commerce in Malaysia. . A number of measures have been used for the PU and PEOU constructs (Davis 1989); (Legris, Ingham and Collerette 2003); (Venkatesh, Morris, et al. 2000). The measures of PU include performance

increase, productivity increase, effectiveness, overall usefulness, time saving and increased job performance.

2.2.2 Diffusion of Innovation (IDT)

The other widely used theory is IDT, which various literature argues complement the TAM (Koenig-Lewis et al., 2010; Venkatesh et al., 2003). Tobbin (2011) presented a framework that utilizes the constructs of perceived trust, transactional cost and perceived risk in addition to the key constructs of the TAM and the IDT theory to explain the acceptance and use of mobile money transfer services among Ghanaian consumers. IDT helps to understand customer's behavior in the adoption or non-adoption of an innovation (Vaugh and Schavione, 2010; Lee et al., 2003).

In the theory, diffusion is defined as "the process by which an innovation is communicated through certain channels over time among the members of a social system" (Rogers, 2003).The theory highlights five perceived characteristics that influence the adoption and non-adoption of an innovation which are: relative advantage, perceived compatibility, simplicity or complexity of use, trialability and observability (Rogers, 2003; Koenig-Lewis et al., 2010; Lee et al., 2003) as the key characteristics that enable an innovation to be taken up by a population. Some of the main construct of the theory are;

Relative advantage

Rogers (2003) defines relative advantage as the degree to which an innovation is perceived as better than the idea it supersedes. It refers to whether the innovation is perceived to be superior to the product or service from which it evolves (Laukkanen & Kiviniemi, 2010). Puschel et al., (2010) define relative advantage as the degree to which an innovation is perceived as a better alternative to currently available products and services. Liu and Li

(2009) argue that relative advantage is a very robust predictor of the intention to adopt and use a particular innovation and corresponds to the perceived usefulness component of the Technology Acceptance Model (TAM) put forward by Davies (1989). Lee et al (2003) affirm that users are more prone to adopt a new technology when they perceive that it offers a relative advantage over existing one.

Complexity

Rogers (2002) describes complexity as the degree to which an innovation is perceived as relatively difficult to understand and use. Complexity is similar to the perceive ease of use component of TAM and is a significant predictor of the intention to use and adopt an innovation as the more complex an innovation is the slower its rate of adoption will be(Liu & Li,2009). Lee et al. (2003) affirm that perceived complexity negatively affect mobile transaction and adoption.

Compatibility

Rogers (2003) defines compatibility as the degree to which an innovation is perceived to be consistent with existing values, past experiences and the need of potential users. Lee and Lee (2010) argue that people tend to more easily adopt technologies that are compatible with the current technologies that they have or had before. Innovations that match with the lifestyle of users usually have a faster adoption rate (Koenig-Lewis et al., 2010). In the context of mobile money, compatibility refers to the extent to which m-money is consistent with consumers' lifestyle and current needs (Kleijnen et al., 2004)

Observability

Rogers (2002) argues that observability is the degree to which the results of an innovation are visible and tangible to others. Liu and Li (2010) assert that the more it is easy to describe

and observe an innovation the more positive impact it will have on people which will eventually encourage usage of the innovation. Cruz et al., (2010) affirm that probability of adopting an innovation increases when the benefits and usage of innovation can be easily observed.

Trialability

Trialability is defined as the degree to which an innovation can be tried on a limited basis (Rogers 2002). As per Rogers, there is a faster adoption of new ideas when these can be tried before their full implementation whilst adoption tend be slower where prior trial is not possible (Puscel et al., 2010). For financial services, however, Aldas-Manzano et al (2009a) assert that customers are unable to try them before adoption.

2.2.3 Unified Theory of Acceptance and Use of Technology (UTAUT)

A broad, powerful and robust theory that consolidates TAM, IDT and other models is the Unified Theory of Acceptance and Use of Technology (UTAUT) model, developed by Venkatesh et al., (2003).Zhou (2011) asserts that it is robust than other theories of technological adoption. The UTAUT aims to explain user intentions to use an Information Systems (IS) and subsequent usage behavior. The theory holds that four key constructs (performance expectancy, effort expectancy, social influence, and facilitating conditions) are direct determinants of usage intention and behavior (Venkatesh et. al., 2003).

Koenig-Lewis et al., (2010) in their study came out with five dimensions. The dimensions include perceived usefulness, compatibility, cost of use, ease of use, and perceived trust. Sun et al., (2012) also identified five dimensions, perceived usefulness, perceived credibility, perceived financial cost, perceived expressiveness and subjective norm.

2.3 Review of Related Empirical Literature

2.3.1 Defining Mobile Money

The concept of mobile money becomes known from the mobile industry and the practitioner arena with remarkably little academic literature. In a recent literature review, Diniz, de Albuquerque and Cerney, (2011) showed that the majority of literature are based on developed world cases on mobile payments, with little or no reference to mobile money as a developmental tool. Specifically, it became crystallized as a payment system based on mobile phones after the first two "Mobile Money Summits" in 2008 and 2009 (Maurer, 2012). It is also referred to as a suite of financial services offered through mobile phones and other handheld mobile devices (Dolan, 2009).

Jenkins simply defined it as money that can be accessed and used via mobile phone (Jenkins, 2008) The key services included in the mobile money domain are person-to-person money transfer (domestic and international remittances); phone top-up (paying of credit units); mobile payment for retail transactions (including payment of bills) and mobile banking (Hughes &Lionie, 2007; Ivatury, Gautam & Mas, 2008). These services include the capability of turning a mobile device into a business tool, substituting or complementing banks, ATM and credit cards (Vashney & Vetter, 2002).

The World Bank (2012) grouped mobile money into different types of financial services as mobile finance, mobile banking and mobile payments. Mobile finance includes credit, insurance and savings services. Mobile banking can be transactional or informational. Mobile payments range from payment made from person-to-person, government-to-person, and business-to-business. These types of financial services have traditionally belonged to commercial banks or microfinance institutions.

 Hughes and Lonie (2007) proposed that services such as bill payment, salary payment and local and international remittances could be included in mobile money. These added features and services are viewed by financial analyst as providing banking services to the unbanked. Through the pay bill features available through mobile money services it is now possible to pay for electricity and water, digital television, parking fees and several other services. This is a rising trend among many consumers especially those in urban settings. The use of mobile money to pay bills is chiefly among wealthier, urban customers (Zutt, 2010).

Must and Ludewig (2010) trace the rise of mobile money to the rapid and worldwide penetration of mobile phones back to 1999. However, mobile phone enabled commerce (m-commerce) or services may have started as early as 1997 when mobile phone enabled Coca Cola vending machines and mobile phone banking services were introduced in Finland. Earlier documented mobile commercial services include a Philippine mobile operator's launch of SMART money in 1999. By the year 2000, mobile money technology had started to spread to include several other countries. Later GLOBE Telecom launched G-cash in 2004 (Wishart, 2006). Bharti Airtel launched their mobile money transfer pilot project in India in 2007 (Bosi, Celly & Joshi, 2011).

2.3.2. Mobile Money and Demographic

Demographic profiling is the process of splitting the market by considering personal similarities and differences, such as gender, age, marital status, occupation, income, and household structure. The relationship between socioeconomic characteristics and consumer behavioural intentions has been widely researched in technology acceptance literature (Im, Bayus, & Mason, 2003; Meuter, Bitner, Ostrom, & Brown, 2005). For example, Wei (2001) studied the socioeconomic characteristics of mobile phone laggards in Hong Kong.

(Pedersen, 2005) studied the demographic characteristics of early adopters of mobile commerce when compared to non- adopters while Turel, Serenko, & Bontis (2007) did the same for general mobile services like voice and messaging.

Jack & Suri (2011) carried out a survey of 3000 randomly selected households in Kenya, the largest survey on M-PESA so far. The results show that although there was no significant difference between the genders of the users, the adopters are more likely to be literates than the non-adopters. Also, the early adopters of the M-PESA were found to be wealthier and more literate than later adopters. Similarly, Mbiti & Weil, (2011), in examining micro-level data from the FinAccess surveys between 2006 and 2009, concluded that frequent M-PESA users are more likely to be urban, educated, banked and affluent.

2.3.3. Key Drivers of Mobile Money

The key drivers for mobile money deployment in developing countries have been the rise in remittance services both local and foreign and the provision of financial services to the rural unbanked (Jack & Suri, 2011). Although, mobile money is much associated with mobile payments, its most significant achievement to date is on the person to person transfer of funds and the provision of banking services to the unbanked (Muwanguzi & Musambira, 2009). For example, in its initial usage, M-PESA (Safaricom's mobile money services in Kenya) was characterized by person-to person money transfer from the urban workers to their families in the villages (Muwanguzi & Musambira, 2009; Morawczynski, 2011). Also, in the Philippines, remittances to family members on remote islands through Globe GCASH were being used by over two million people (Maurer, 2012).

Individuals, especially those in split families had a tremendous need and willingness to pay to make remote payments conveniently and securely (Berman, 2011). In emerging markets like Ghana, many reported paying large sums (sometimes up to 20% of value) to bus drivers to send funds to their families in the villages. Although vast sums are paid in fees, transfers through bus drivers had many disappointments, such as, lateness, frequent breakdowns, and drivers being attacked on their way. The desire to engage in person-to-person money transfer using mobile phones in some countries precedes mobile money. Prepaid airtime was being used as a mechanism for money transfer and the purchasing of goods and services (Merritt, 2011).

The rapid deployment of telecommunication infrastructure throughout the developing countries meant that the rural areas were being reached. The mobile operators and their distribution channels were reaching the remote parts of the countries. This meant that more and more places where it was not profitable to build a retail bank, now have access to mobile phone and the operators' distribution networks; thus, making it possible to extend financial services to large segments of the unbanked poor people. The instantaneous transfer that takes place when a consumer purchases the electronic value instils some confidence in the mobile money transfer services. According Dahlberg, Mallat, Ondrus and Zmijewska (2008) mobile money transfer used as a means of exchange coupled with its vast diffusion levels presents itself as an opportunity to realize the highest number of unbanked people in the developing world.

2.3.4. The Impact of Mobile Money with insights from Kenya's M-Pesa

Global research on mobile money has focused on the impact in developing countries revealing that access to financial services through mobile money leads to poverty reduction

and financial inclusiveness (Must &Ludewig, 2010). Some of these studies reveal that mobile money has proved to be a scalable method to provide financial services in developing countries, with data from several African countries including the work of Must and Ludewig (2010) verifying this argument. Erickson (2010) asserts that mobile money can serve as a poverty reduction tool in his study dubbed mobile money: cell phone banking in developing countries. In their work, Morawczynski and Pickens (2009) and Mas and Morawczynski (2009) explored the economic and social impacts of M-Pesa in Kenya. Morawczynski and Pickens (2009) find ethnographic evidence that M-Pesa has changed the savings behaviour, the pattern of remittances, and has increased rural livelihoods.

In their recent studies, Wolman (2012) asserts that MM has made savings more accessible to the unbanked and Kusimba et al (2013) observe that savings in general has been facilitated by the adoption of mobile money (in Kenya), and various Non-governmental organizations worldwide are adopting MM as a means of payment in various initiatives, it remains to be seen whether MM has any impact on the Ghanaian. While these studies provide suggestive evidence of the impacts of M-Pesa, they are generally unable to quantify the effects of the system and are limited by their small sample sizes.

According to World Bank, (2012), increased mobile phone penetration in developing countries is correlated with a 0.8% increase in economic growth. Mobile money penetration has, therefore, had its own contribution especially in relation to financial inclusiveness. Considering there are over 100 deployments of mobile money systems in developing countries, with around half in Africa alone the service has a clear target population.

Mobile money has developed a wide range of services that can be used to benefit users in different ways. The services offered through mobile money in Kenya allow users to benefit from a variety of financial services and transactions. According to Inter Media (2010) a majority of subscribers (99%) only use mobile money service to send or receive money; the remaining 1% using it for additional services including arranging for loans or credit. M-banking in particular is a service available through mobile money that has been the potential to bring basic banking and electronic services to unbanked consumers (Anderson, 2010).

Mobile money impacts on individuals and households in various ways. Donovan (2011) looked at M-Pesa in Kenya in an attempt to find the impact it had on human freedom. He concluded that a relationship of networks of social interactions, the need and desire to coordinate financially with friends, relatives and businesses, and progressive desertion of other alternatives like banks and Western Money Union led to a form of power that acts on all Kenyans both users and non-users of M-Pesa. In addition, mobile money significantly impacts on the ability of a household to spread risks as a result of reduced transaction costs compared to households without mobile money who are likely to suffer a drop in consumption when hit by a negative income shock (Jack & Suri, 2011).

Consumer resistance to product uptake has been known to occur when adoption and use of the product require significant alterations in the consumers' value systems, as well as their "established behavioural patterns, norms, habits and traditions"(Kleijnen, Lee, &Wetzels, 2009). This resistance can lead to negative attitudes towards the product, resulting in its outright rejection (and hence non-adoption), postponement of use, or outright opposition, and thus, a market failure for the product (Bredahl, 2001; Grabner-Kraeuter, 2002; Lennon, Kim, Johnson, Jolly, Damhorst & Jasper, 2007).

Money that is easier to use within the socio-cultural context will result in positive attitudes and faster consumer adoption, whereas those that are not will be slower to be accepted or may be marginalized. Whereas economic development factors and technological advancement may warrant the introduction and use of novel systems of payment and stores of value (i.e. money), design aspects of these novel systems or objects can determine its adoption by consumers. In addition, given the varied social functions of money in the Ghanaian social sphere (for example in the context of gifting in the observation of religious obligations and societal rites of passage), a question worth considering is whether MM will play larger roles in the lives of individuals and their families other than for money transfers, which facilitate people in meeting their familial financial obligations by providing financial support through remittances. Kusimba, Chaggar, Gross and Kunyla (2013) observed that MM can be associated with unintended negative social consequences. For instance, they observe that MM allows Kenyans to gift money (e.g. at weddings and funerals) without needing to physically be present. While this eliminates travel costs for the sender and therefore makes economic sense, there is a social cost of the individual not being physically involved in the ceremony. The authors also observe that a downside of the convenience of MM is an increased request for remittances.

Increased employment opportunities due to the expansion of existing businesses, development of new business start-ups or through direct employment as M- PESA agents is another benefit attributed to M-PESA (Plyler et al., 2010). The increased circulation of money driven by the ease to make transactions using M-PESA has enabled businesses to grow in order to accommodate the increased local demand for goods and services. New businesses have also developed, such as Beba9, which have an operation platform similar to that of M-PESA. In terms of direct employment, Safaricom has recruited over 30,000 agents

across the country to operate M-PESA shops and earn commissions on transactions by service users.

M-PESA has also been reported to increase the financial autonomy of members with a lower bargaining power in a household (Mas & Radcliffe, 2010; Morawczynski, 2009; Plyler et al., 2010; Donner & Tellez 2008). In most Kenyan households, gross inequalities exist between men and women especially in ownership and control of resources due to existing cultural norms such as land inheritance by the males. Indeed, men in Kenya hold about 95 percent of the total land holding in the country (UNDP &UNIFEM, 2005). As such, men have traditionally controlled land and cash crop cultivation while playing a passive yet dominant role in running the household, leaving women with limited income sources to support their families (Demombynes & Thegaya, 2012, 5; Jack &Suri, 2011a). Through using M-PESA these women have been able to receive and manage their funds independently towards the household budget without having to seek permission from their husbands (Morawczynski, 2009). This is mainly because the transactions made through M-PESA are less visible to others as compared to money delivery through relatives or the post office.

Moreover, M-PESA promotes entrepreneurship by providing a platform for development of new services and by enhancing the performance of small enterprises in the country (Mbogo, 2010; Kendall, et al., 2012). Over 300 formal businesses and several informal businesses in Kenya are integrated with M-PESA in their operation (Kendall, et al., 2012, 52). For instance,

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M-Kesho, an online formal version of Kenya's informal saving systems such as the rotating savings and credit association (ROSCA) and the accumulating savings and credit account (ASCA), has been linked with M-PESA to enable the users to save money, interest on their funds, and access loan services (Mbogo, 2010).11 In addition, a number of banks have joined mobile money platforms to enhance service provision by enabling clients to link the M-PESA accounts to their bank accounts. M-PESA also enhances the performance of small enterprises by providing them with a tool to efficiently affect transactions. By using M-PESA, microbusiness enterprises are able to increase the speed of service delivery, reduce costs and increase efficiency, thereby creating a competitive advantage in their operation (Ibid.).

2.3.5. The Adoption of Mobile Money

The acceptance, use and adoption of mobile money as a phenomenon of interest are contemporary and scarcely researched. Studies from the development/practitioner literature dominate research in this area (Ivatury& Pickens, 2006; McKay & Pickens, 2010; Porteous, 2006).However, since the launch of SMART Money in the Philippines in 2003, there are currently 145 mobile money deployments which have been launched across 73 developing countries (MMU, 2012).There is a further 104 deployment planned. The year 2010 alone saw 31 new mobile money deployments in 25 countries. There are varied business models including MNO-led, Bank-led and mobile content provider-led. So far, the most successful deployment of mobile money is Safaricom's M-PESA in Kenya. Since its launch in March 2007, it has been adopted by 11.7m customers (corresponding to 54% of Kenya's adult population and 73% of Safaricom's subscriber base) and routes extra transactions nationally than Western Union does globally. US $415 million per month in person-to-person

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transfers, equal to 17% of Kenya's 2009 GDP on an annualized basis (Mas&Radcliffe, 2010).

In an empirical study of the factors affecting the adoption of mobile banking by the poor in South Africa, Ismail &Masinge (2011) found perceived usefulness, perceived ease of use and affordability as the key determinants of consumer adoption of mobile banking. However, perceived risk was found not to influence the adoption of mobile banking significantly. In a separate empirical study by Ajo et al., (2012), 67% of the sample population gave a rating of five (excellent) and four (good) that they felt comfortable using the M-PESA services. Further 87% of the sample reported that the system was easy to learn how to use.

Adapting Grewal (2008)'s drivers of adoption, Donovan, (2012) explained that the adoption of MPESA in Kenya was due to the interplay of reason, force, and chance. Reason is explained as the intrinsic meaning that a user derives from the characteristics of the technology and extrinsic meaning that comes from the attractiveness of being a member of a network. Force, on the other hand, can be direct or indirect pressure on a user to adopt the technology. He explained that the effect of intrinsic meaning is pungent at early adoption stage while the network effect (extrinsic) is most effective at later stages of adoption.

2.3.6. The success of mobile money adoption in Kenya (M-PESA)

Some authors either describe the specific factors for success of a particular Mobile Money service, or compare two (or more) countries to create an understanding of what factors affecting the diffusion of Mobile Money (Ngugi et al, 2012; Camner et al, 2009; Morawczynski, 2010). Others have taken a more holistic approach trying to explain the

enabling environments that affects the uptake of Mobile Money (Heyer & Mas, 2011; Kapoor & George et al, 2013).

Heyer and Mas (2011) in their article "Fertile grounds for Mobile Money: towards a framework for analyzing enabling environments" present a set of *five* factors that could determine the potential for success: extent of latent demand for transactions, range of quality of existing alternatives, regulatory environment, retail landscape and cellular market landscape.

Kapoor and George et al (2013) in their paper, identifying what makes Mobile Money successful is "Mobile Money – Influencers of Success" analyzed the diffusion of 17 Mobile Money deployments around the world in order to identify the critical success factors. The key aspects included in the article are regulatory landscape, socio-economic conditions, stage of market development, and profile of service providers and role of supporting institutions, managing the customer value proposition; channel management; technology and user interface.

According to Ayo et al. (2012), "M" represents mobile and "PESA" for money in Swahili, in regards to M-PESA, is Kenya's mobile money system. Fengler (2012) stated that, Kenya's MPESA has become the world's leader in mobile payments and IFC (2011b), also added that Kenya is the most successful developing country for m-money usage, since more than 80% of the population, of cell phone users use the payment system. However, with the population of mobile money users in the world at over 60million, Kenya can be said to have one in three of the users (Fengler, 2012).The factors that contributed to the success of M-PESA in Kenya are:

Quality of alternative financial services

Studies indicate that mobile money is more likely to be adopted if the quality of the alternative remittance channels such as payment cards (debit and credit cards), and bank branches is low. Before the implementation of M- PESA, the common ways of sending money in Kenya included using the post office, bus companies, sending relatives or friends, or personally travelling to make the delivery (Camner & Sjoblom, 2009; Morawczynski, 2008; Kabbucho et al., 2003). The use of the post office money remittance service was perceived by many Kenyans as expensive and inconvenient due to limited locations and higher user fees (Mas & Ng'weno, 2010, 25). Moreover, the other methods of transporting cash were: unsafe, as one could be easily mugged or robbed; unreliable, because there was no guarantee that the money could reach the intended destination or be received within the intended timeframe; and time consuming, as one would need to make plans and take time off work in order to travel up country to deliver the money. These conditions facilitated the quick up-take of M-PESA in Kenya, which offered a superior service to the alternative methods.

Quality of Existing Financial Services Infrastructure

The penetration rate of financial services has been established as a key influence on the rate of mobile money adoption. According to the literature, poor quality of existing traditional financial services such as banks promotes the adoption of mobile money services, which offer efficiency, greater accessibility, and more convenience comparatively. However, very poor financial services infrastructure can also derail the adoption of mobile money services by making it more challenging for service providers and agents to adequately manage their liquidity (Camner&Sjoblom, 2009).

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Market Share of Service Provider

Popularity influences the adoption of mobile money services by promoting awareness about the usefulness of the service to potential users. At the time of M-PESA launch, Safaricom had a market share of 80 percent, which was very high compared to other markets (TCRA Statistics, 2009; Safaricom Statistics, 2009). The superior dominance of Safaricom enabled it to advantageously position itself against its competitors when it unrolled the M-PESA scheme in Kenya thereby acquiring more users comparatively. This is because the existing network of Safaricom mobile phone users provided a ready market for the company to quickly reach and capture a wider market base for its M- PESA service (Donovan, 2011; Heyer& Mas, 2011, 2).

Urbanisation

The higher rate of urbanization is attributed to Kenya's capitalism development ideology, and policies that encouraged urbanization through modernizing the urban areas and leaving the rural areas largely underdeveloped (Camner & Sjoblom, 2009; Ross &Weisner, 1977). This influenced people in the rural areas, especially the males who are predominantly the heads of household, to move to urban areas to seek work opportunities. However, the existing cultural practices such as ancestral land inheritance created the need for urban migrants to maintain ties with rural their homes, which were reinforced through sending remittances (Morawczynski 2011, 121; Heyer& Mas, 2011, 3). This resulted to the development of a dominant urban-rural remittance corridor that influenced the greater adoption of M-PESA in Kenya.

Regulations

The regulations set to govern mobile money operation can either promote or constrain the deployment of a mobile money service in two key ways. First, the regulations may influence the structure of the business model, which determines the ability of a mobile money provider to quickly reach a wider base of clients or to scale out agents (Heyer& Mas, 2011; Economic Forum, 2011).

Financial Literacy

Studies indicate that the use of financial services increase with the level of education (Cole et al., 2011; Nunoo & Andoh, 2011). Generally, literacy is important in the provision of mobile money services because the product delivery platform, a mobile device, requires an individual to have the basic knowledge on how to read the mobile device screen. However, the need for financial literacy is even more important because it improves access to and utilization of financial services. As a result, users are equipped with the capacity to gauge the value of a service and to demand for other value added mobile money services.

The 2006 FinScope survey indicates that prior to the launch of M-PESA in Kenya and Tanzania; both countries had a low level of financial penetration. However, the financial access level was much lower in Tanzania which had an exclusion rate of about 54 percentage compared to Kenya at 38 percent (FinScope, 2006; FinAccess, 2007). This indicates that the level of financial awareness was much greater in Kenya

Level of economic Development

At the launch of M-PESA, Kenya had a stronger economy with a GDP per capita of approximately US$ 700, which was relatively higher (World Bank, 2010).This relatively

stronger level of economic development enabled Safaricom to build a wider and efficient agent network from the existing base of airtime retailers that mostly comprised of SMEs with multiple retail outlets that became part of its extensive retail network (Heyer & Mas, 2011; Camner et al., 2009). Moreover, Kenya's strong economy also had an implication on the level of the banking system development that is partly attributed to the success of M-PESA.

Agent network

Successful mobile money operations are supported by an extensive network of well-trained agents who provide the cash in/cash out points at the local level (Heyer & Mas, 2009). Agents are very important in enabling a money mobile service provider to achieve efficiency in service delivery by providing reliable services and answering user questions and thus contribute to building credibility and trust in the use of the service (Mas & Radcliffe, 2010; Morawczynski & Miscione, 2008).

A Culture of Remittance

The strong culture of remittance in Kenya is another factor attributed to the greater adoption of M-PESA in Kenya. Studies indicate that the degree to which the use of mobile money is compatible with an individual's past experiences, social norms and cultural values influences the behavioural intention to adopt the service (Brown et al., 2003, 384; Schierz et al., 2010, 211; Biljon & Kotzé, 2008). Further, Morawczynski (2011, 99) highlights that the proliferation of socio-technical systems such as M-PESA depend on their adaptation to the "social practices and local systems of logic".

The 'Send money home' proposition that was the central to the marketing campaigns clearly communicated the use of the system in Kenya, the 'Send money home' message was well adapted to the existing culture of remittance. Split familial structures are a common feature in Kenya's rural households due to prevalent rural-urban migration. The urban migrants stay in touch with their families by sending money to their rural homes. Therefore, the 'Send money home' proposition resonated well with the existing practice of sending money to the rural home. (IFC Report, 2011b).

Financial Autonomy

Another cultural aspect that facilitated the adoption of M-PESA in Kenya is its contribution to increasing the financial autonomy of the less empowered members of a household that mostly comprise of low income women. In most Kenyan communities, the traditional practices such as sole ownership of household assets by the males have served to limit women's bargaining power within the household. As such, women have often sought other alternatives to manage their income, which include joining informal savings groups such as ROSCAs and ASCAs. A survey study by Anderson & Baland (2002) finds that 84 percent of the ROSCAs members are women and that married women are most likely to join a ROSCAs In exploring this phenomenon, the study finds that women participate in ROSCAs in order to conceal their incomes from their husbands. M-PESA complements this practice by providing women with a more secure and invisible way for them to manage their finances without seeking approval from their husbands, thus increasing their household bargaining power (Morawczynski, 2009; Jack &Suri, 2011a, 12; Plyler et al., 2010).

2.4 Mobile Money Transfer in Ghana

Table 2.1: Bank of Ghana Mobile Money statistic 2015

INDICATOR	END 2010	END 2011	END 2012	END 2013	END 2014
Total number of mobile phonesubscribers	10,474,259	16,707,459	18,620,563	19,978,190	21,409,520
Registered mobile money customers (cumulative)	1,838,000*	3,183,970	2,960,982	3,303,837	5,424,650
Active mobile money customers*	26,000	93,491	345,446	963,495	2,369,997
Total volume of mobile money transactions (annual)	1,040,000*	9,471,729	14,585,398	36,796,146	106,431,007
Total value of mobile money transactions GHC (annual)	26,820,000*	116,528,656	413,158,798	2,351,000,000	11,592,000,000

Source: www.bog.gov

*Active customers refers to the number of customers who transacted at least once in 90 days prior to reporting

*In 2010, MTN was the only mobile money provider and in 2011, Tigo and Airtel came on board thereafter

According to Hinson (2011), majority of the population in developing economies like Ghana do not have access to a bank, credit union or similar financial services. Studies conducted by the World Bank (2011) shows that only 30% of the Ghanaian adults populace have an

account or access fiscal services, since it is a cash-driven society, and not only because of poverty, but the cost, travel-distance, and the amount of paperwork involved .

This is in spite of the fact that there are 26 universal banks, and over 110 community and rural banks currently operating across the length and breadth of Ghana. Out of the total number of bank account holders in Ghana, 52 percent live in the urban areas. The data goes on to reveal that seven percent (7%) of these people use the accounts to receive government payments, six percent (6%) uses the accounts to secure loans from financial institution, 11.7 for remittances and 11.2 use it to receive their salaries (World bank, 2011) .

Money transfers through mobile phones is a non-traditional banking that often doesn't require users to travel or set up an account at a bricks-and-mortar bank, thus was introduced to solve these problems.

Hinson (2011) added that it is a strategy, intended to achieve financial inclusion for the unbanked population. It is the newest electronic banking innovation, and a revolution changing the lives of millions across the globe (Uzor, 2011). It is also expected to benefit many sectors of the Ghanaian economy which would aid in financial inclusion and also economic growth, Hinson (2011).

The m-money service in emerging economies like Ghana has an 'open scheme', whereby the sending of funds between the sender and the recipient is likely to be a flawless one. This is as a result of the regulatory framework implemented by Bank of Ghana, where the lead role in providing the service is given to the financial institutions (Ayo *et al*., 2012)

On the use of mobile phones for payments, Ghanaians rely very little on this medium. The report said only one percent of the adult population use mobile phones to send money while only 1.5 percent of adults use mobile phones to receive money, and only 0.9 percent use the

mobile phone to pay bills.(Sedzro,2013).The Bank of Ghana statistics above also confirmed that in 2013, the total number of mobile phone subscribers were around 19 million, registered customers were about 3 million and active customers were only 900,000.During 2010,the first year of its implementation, less than 1% of Ghanaian populace adopted to the service and as of now, only about 11% are active users.

Mobile money operators in countries like Ghana are quickly rethinking their business strategies and are finding ways to provide a new range of services to their existing customers and reach a new clientele, namely by participating in the m-banking industry. (Krugel, 2007, p. 3).This was the result of when the Government of Ghana (GoG) and Ghana's Central Bank, the Bank of Ghana (BoG) in 2008, formally established a bank-led(meaning bank-like financial institutions or their agents are the only types of institutions that are permitted to undertake mobile banking activities) and , many-to-many m-banking sector (Ghana's m banking sector will promote maximum connectivity and outreach by prohibiting exclusive partnerships and encouraging banks, MNOs, and other agents to form partnerships and entertain each other's customers in Ghana which included major guidelines for financial institutions and other interested parties who desired to undertake mobile banking in Ghana (Bank of Ghana, 2008)

According to the Bank of Ghana statistics, 2014 annual transaction volume of mobile money in Ghana stands at 106,431,007 which is estimated at 11 billion Ghana Cedis. This figure will increase significantly if mobile money recognition increases and bring abundant benefits to stakeholders.

2.5. Mobile Money Ecosystem

The terminology business ecosystem was developed from biological ecosystem perspective coupled with the study of business networks. Initially used by Moore (1993), he defined a

business ecosystem as 'an economic community (made up of the suppliers, customers, partners, competitors and other stakeholders) supported by a foundation of interacting organizations and individuals – the organisms of the business world' (Moore, 1996). Through the lens of the business ecosystem concept, one puts focus on the interconnectedness of the various actors and the fact that they depend on each other for survival (Peltoniemi, 2005; Iansiti and Levien (2004b).

Like Moore (1993), Iansiti and Levien (2004b) argued that no firm can work in isolation and that the health and performance of a firm is dependent on the health and performance of the whole business community. They went further to develop metrics for the measurement of the health of ecosystems and they proposed robustness, productivity and niche creation as key elements. Furthermore, they developed innovation and operation strategies that a firm can adopt depending on its role in the ecosystem (Hartigh & Asseldonk, 2004).

Extending the business ecosystem to the mobile money environment, Jenkins (2008) and Tobbin (2011) suggest that there are a number of key players in the mobile money ecosystem – including consumers, Mobile Network Operators (MNOs), banks, agents, merchants, competitors and regulators. They share a common fate in the ecosystem. . There are however other stakeholders: micro-financial institutions, international financial institutes and donors, and civil society, who could contribute to the ecosystem. However, none of them play a vital role (Jenkins, 2008).Below is the key stakeholders and their roles in the ecosystem using Tobin's (2011) model.

Fig 2.1: The Mobile Money Ecosystem
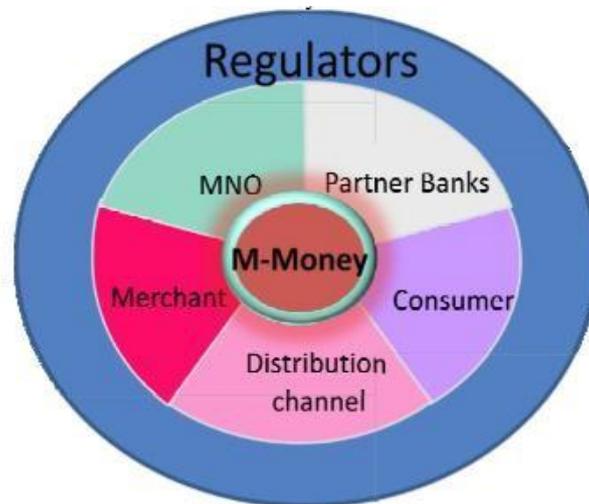
Source: Tobbin, (2011)

2.6 Mobile Network Operator (MNO)

The MNOs come into the mobile money ecosystem with assets and capabilities. According to Merrit (2010), MNOs have taking the leading role in the ecosystem. First they bring the infrastructure, including wireless communication, back-end m-commerce server and application facilities, and the mobile device application. Secondly, MNOs bring into the ecosystem their huge existing distribution channel used for the sale of subscriptions and prepaid credits. These channels are normally more far reaching than the branches of the financial institutions. Wherever there is mobile coverage, there is an agent of a distributor who sells the relevant prepaid cards. As posited by Jenkins (2008), the ability for MNOs to reach customers across all income segments is what gives them the impetus to be key players in the mobile money ecosystem. Usually the customers in a mobile money ecosystem belong to the mobile network operator. It provides customer service facilities to the customers and training for the agents in dealing with the customers (Jenkins, 2008; Tobbin 2011).

Financial Institutions (Banks)

Payment systems and mechanisms to store value are primary functions of financial institutions. Financial institutions, therefore, come into the mobile ecosystem with their vast experience and customer trust in dealing with money. They provide the banking license and store the mobile money customers' deposits in trust accounts. The branch offices of the banks act as aggregation points for the merchants and distribution channels and their agents. In most implementations, the banks act as the intermediary between the MNOs and the agents in acquiring the e-value. Where merchants are involved, the banks provide a link to the existing merchant accounts to facilitate the flow of money from its e-float account to its main account. They also provide online banking integration to the m-commerce system of the MNOs to facilitate their operations. They are usually the only institutions mandated to deal with cross border financial transactions (foreign remittances) and settlements. They provide financial regulatory advice to the MNOs (Jenkins, 2008).

Distribution Channels (Agents)

The distribution channels through their agents act as the primary contact with the customers. These are non-bank entities such as retailers (either the MNO's own retail center or another retailer such as a village store) that handle customer registration and the cash-in/cash-out services on behalf of the MNO (Jenkins, 2008; Tobbin 2011). They contribute through their knowledge and understanding of the customers and their needs to further develop the mobile money services. Traditionally, the MNOs were expected to use their distribution channels, which resell airtime, as the main agents of mobile money. However, in most current implementations, the agents have extended to general retailers especially in the rural areas. The agents naturally become branches of the MNOs. The key to choosing an agent lies in the retailer's liquidity. They tend to have sufficient liquidity from other business activities to

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satisfy customers' needs to withdraw cash. The agents earn commission for mobile money services rendered. Although these are usually very small amounts per transaction, it is expected that the volume of transactions will add up to a good amount. Agents who are existing retailers usually obtain an additional benefit of reducing their risk of carrying huge cash to the bank (Jenkins, 2008).

Merchants & Utilities

The merchants and utility providers offer an additional reason to adopt and use the mobile money services. Merchants include retail shops, online shops, casinos, lotteries, and general goods and services providers who adopt the mobile money platform as a means to receive payments from customers. For example, both M-PESA in Kenya and ZAP in Ghana are used for the payment of the most popular pay-per-view TV service in Africa (DSTV). Customers of the merchant buy e-value from an agent and use it to pay the merchant by transferring the e-value to the merchant's account. Instead of spending hours in queues to pay utility providers, mobile money affords customers the ability to make payments using the e-value on their mobile phone. This provides convenience, speed and security to the merchant and its customers. The availability of merchants and utility providers increases the customer base of the mobile money ecosystem and, thereby, acts as a catalyst in promoting the services. Thus, the use of mobile money will reduce the cost of payment collection and processing. It will also increase timeliness of payment and offer greater customer convenience. These advantages can lead to an increase in the customer base for the merchants (Jenkins, 2008).

Regulators

The role of regulators in the mobile money ecosystem is critical for its long term survival. They potentially bring experience and understanding of the various industries involved in this ecosystem. When fulfilling their role and obligations, they work to provide a balance between innovation, value creation, efficiency, financial inclusion and prudence through the imposition of regulations. They can enforce compliance to the various regulations. Furthermore, they can play a refereeing role between competing parties. Their activities cover all the other members of the mobile money ecosystem (Tobbin2011). GSMA has published guidance on developing a regulatory framework for mobile money transfer with a focus on the remittance segment, recognising that mobile operators lack experience in payment regulation. The aim of its report is to explain potential regulatory issues arising from mobile operator payment services (GSMA 2007).

The Customers

The customers bring their diverse needs as opportunities to the mobile money ecosystem. Customers are the final recipients of a mobile money service. The success or failure of the ecosystem depends on customer behaviour towards the mobile money services (Tobbin, 2011). It is, therefore, imperative that customer needs are met by mobile money services and that they have good experience with the services. However, some constraints to be aware of are the lack of financial literacy and cultural resistance towards new technology (Jenkins, 2008).

 Below is a table describing the different stakeholders' roles and their limitations and constraints.

Table 2.2 Key players in the mobile money ecosystem

Players	Roles	Limitations and Constraints
Mobile network operators	1.Provide infrastructure and communications service 2. Provide agent oversight and quality control 3. Issue e-money (where permitted by law) 4. Exercise leadership in drawing mobile money ecosystem together 5. Advise other businesses (banks, utilities, etc.)on their mobile money strategies	1. Regulatory limitations on providing financial services 2. Shareholder pressure for faster, higher returns 3. Strategic focus that may not include mobile money
Financial Institutions	1.Offer banking services via mobile 2.Hold Float or accounts in customers' names 3.Handle cross-border transactions, manage foreign exchange risk 4.Ensure compliance with financial sector regulation	1.Narrow customer base 2.Lack of experience with or interest in low-income customers 3.Stringent regulatory requirements with significant compliance burdens
Agents	1.Perform cash-in and cash-out functions 2.Handle account opening procedures, including customer due diligence Report suspicious transactions in accordance with AML/CFT 3.equirements 4.Identify potential new mobile money applications	1.Liquidity shortfalls 2.Basic business skill gaps 3.Lack of customer trust(in some cases) 4.Limited ability to partner with large corporations
Regulators	1.Provide enabling environment for mobile money 2.Protect stability of financial system 3.Demonstrate leadership to encourage and protect behavior change	1.Lack of experience with 1.Convergence of financial and telecommunications regulatory schemes 2.Lack of financial and technical capacity
Consumers	1.Use mobile money to improve their lives	1.Lack of awareness 2.Limited financial literacy 3.Cultural and psychological resistance

Source: Jenkins(2008)

2.7. Mobile Money Transfer Process

The mobile money consists of a number of interconnected systems that form the mobile

money network. It is a client server based system with the client application residing on the

SIM card, a chip that identifies the subscriber's phone number, connecting to MNO's m-

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commerce server. When initiated, the application connects to the MNO's network and uses the SMS protocol to communicate with the m-commerce server. A mobile money transfer will usually involve 4 steps: registration, cash-in, transfer, and cash-out.

A onetime registration process (1) is required before a user can use any of the mobile money services. The registration process is usually free. A customer visits an agent and fills in an application form. The agent verifies the customer's ID (either a national ID, driving license etc) then uses his phone to register the customer temporarily on the MNO's m commerce server. An account with a mobile wallet (m-wallet) is created on the m-commerce server,anSMS confirmation is sent to the customer. The customer chooses a secret PIN, which becomes his main authentication token for all future transactions. The application form with the verification proof is sent to the MNO who then establishes the mobile wallet.

The cash-in process (2) involves the purchasing of electronic money (e-value) into the m-wallet. The customer then visits an agent and pays an amount of electronic value. The agent transfers the e value from his/her special SIM mobile phone to the customer through the m-commerce server. Further, an encrypted SMS is sent from the agent's mobile phone to the m-commerce server, requesting for, the transfer to be drawn between the two accounts. An encrypted SMS is sent to the customer to confirm the transaction.

The next step is the actual transfer stage (3). This is usually done through the customer inter face on a basic model phone. To select the best method, which provides a compromise between usability, security and costs, most implementations use a menu driven access by the SIM toolkit, which is the standard software on all mobile phones (Hughes & Lonie, 2007). The customer using the menu on the SIM transfers the e-value from his/her phone to the recipient's mobile wallet. This involves an encrypted SMS to the m-commerce server from the sender with an instruction to transfer the specified amount to the recipient.

After verification and availability of funds checks, them-commerce server actions the instructions by debiting the sender's account with the amount and any fees charged (where applicable) and crediting the recipient. A confirmation through an encrypted SMS is sent to both the sender and the recipient. Most mobile money implementations to date use either SIM Toolkit (STK) or its equivalent USIM (Universal Subscriber Identity Module) application toolkit as the technology platform. However, there are other platforms like USSD (Unstructured Supplementary Service Data) used by Vodacom in Tanzania (Camnar& Sjöblom, 2009). Figure 2.2 illustrates four basic steps that the sender goes through to transfer the money. An encrypted text is then sent to the recipient to inform him/her about the transfer and confirms the recipient's new account balance in the m-wallet.

The fourth and final step (4) involves a recipient visit to the agent to cash-out the transferred e-value. Also, the recipient might decide to either use it to make payments, or leave it in the account (store of value) for a while.

2.8 The Conceptual Framework

Many theoretical models have been proposed to give explanations to end users acceptance behaviour as discussed in chapter 2. The newest amongst them is the Unified theory of adoption and use of technology (UTAUT) by Venkatesh et al. (2003), which has been applied and empirically tested in different domains. Since its inception many empirical studies have been conducted using UTAUT. Venkatesh et al. (2003) noted that researchers typically "pick and choose" constructs across models/theory or take all constructs from a favourite model. Thus, the idea behind the unification of acceptance and usage of technology models/ theories was to arrive at the unified view of user acceptance of IT (Venkatesh et al., 2003).

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A study by Chemingui &Lallouna (2013) identified 6 constructs–relative advantage, compatibility, trialability, facilitating conditions, perceived enjoyment and system quality as the major dimensions in the intention to use mobile in their research Resistance, Motivations, Trust and Intention to Use Mobile Financial Services services. UTAUT has also been tested in several organizational contexts including healthcare organizations (e.g., Venkatesh, Sykes, & Zhang, 2011; Ifinedo2012), business organizations (e.g., Anderson & Schwager, 2004), government organizations (e.g., Zhan, Wang, & Xia, 2011), and Educational institutions (e.g. Birsch & Irvine 2009). Cross cultural validation of UTAUT includes a study on employees' acceptance and use of computers in Saudi (Al-Gahtani, Hubona, & Wang, 2007), Educational technology acceptance in Turkey (Göğüş, & Nistor, 2012), MP3 player and Internet banking in Korea (Im, Hong, & Kang, 2011).

The model is believed to be more robust than other Technology acceptance model in evaluating and predicting technology acceptance (Venkatesh et al., 2003). Venkatesh et al. (2003) attempted to review and compare the existing user acceptance models with an ultimate goal to develop a unified theory of technology acceptance by integrating every major parallel aspect of user acceptance determinants from those models. Many empirical studies recommend integrating TAM with other theories to cope with the rapid changes in information technology, and improve specificity and explanatory power (Carter & Belanger, 2005; Legris et al., 2003).

Chong et al (2010) assert that using TAM solely does not sufficiently explain people's decision to adopt a technology and argue that should rather be used as a base model which should be extended with additional variables based on the technology being studied. An integration of various theoretical perspectives may provide a richer understanding of the mobile services phenomenon (Wu et al., 2007; Nysveen et al., 2005a; Konana and

Balasubramanian, 2005). The eight original models and theories of individual acceptance that are synthesized by Venkatesh et al. (2003) include the Theory of Reasoned Action (TRA), Technology Acceptance Model (TAM), Motivational Model (MM), Theory of Planned Behavior (TPB), As a result of the above, this study has therefore identified the following UTAUT variables which consolidates other variables(perceived risk, perceived trust, perceived ease of use, perceived cost, and perceive usefulness, social influence, competitive intensity), relevant to technology adoption in previous studies. These variables are discussed to serve as a guide in the development and the measurement of the scales to be used in the assessment of MMT adoption, and to check their applicability in the Ghanaian context.

Fig 2.2: Conceptual Framework

Mobile money adoption factors
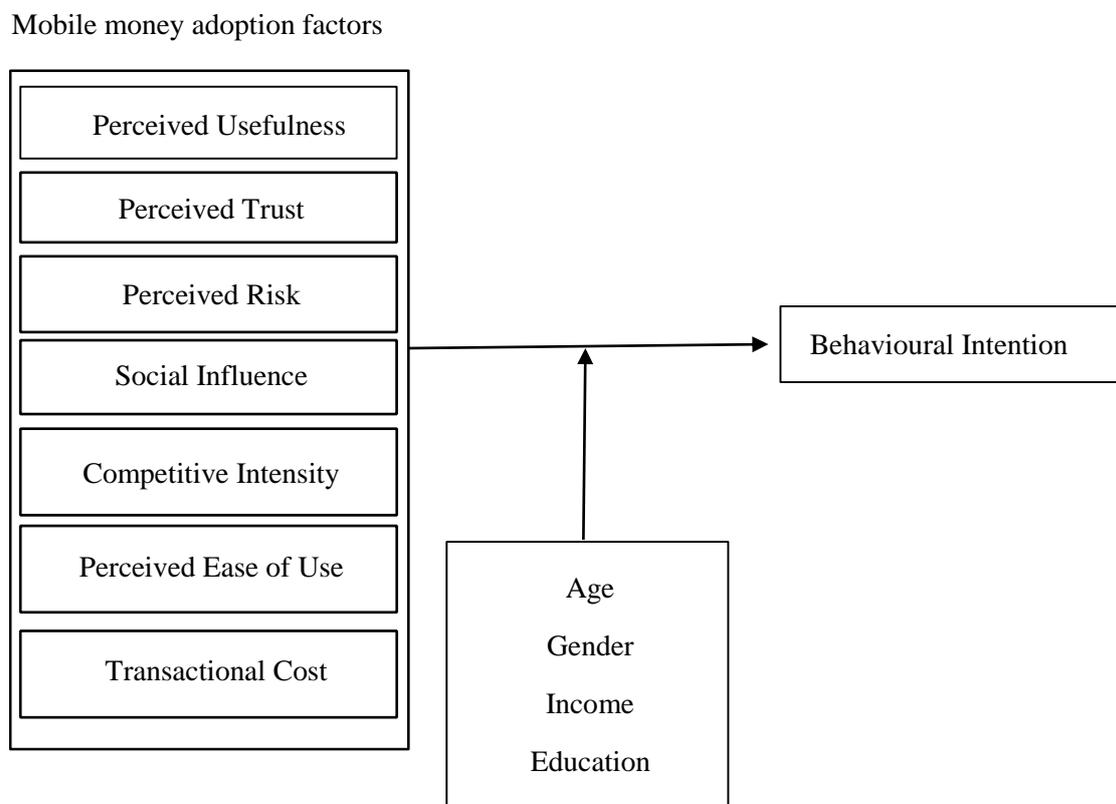
Perceived Usefulness (PU)

PU in the adoption of mobile services is defined in a broader context to include how well consumers believe mobile services can be integrated into their daily activities (Kleijnen et al, 2004). When this belief increases, the consumer's intention to use the MM transfer services will also increase especially in Ghana where the unbanked is high with high mobile phone usage, the adoption rate is likely to be higher. The ultimate reason people exploit MM transfer is that they find them useful (Luarn & Lin, 2005). Ultimately, MMT must be viewed as useful to experience adoption success.

H1: Perceived usefulness has a positive significant relationship with behavioural intention to use Mobile money (MM)

Perceived Trust

Mobile Money transfer environment, like all business transactions require an element of trust. To become a viable unit of doing business MM transfer should overcome user distrust (Siau et al, 2003). And for the purpose of this study, trust is defined as a measure of consumer's level of assurance that the service will be provided with minimum possible hindrance. Consumers need to have a belief that the network is reliable. Previous studies have found perceived trust as a significant determinant influencing consumers' behavior intention towards conduct electronic commerce transactions (Mallat, 2007; Gefen et al., 2003; Jarvenpaa et al., 2000(Gu et al., 2009; Donner & Tellez, 2008; Zhou, 2011; Tobbin, 2010; Siau &Shen, 2003; McKnight et al., 2002; Maurer, 2008; Benamati et al., 2010; Kim et al., 2009; Mayer et al., 1995; Featherman & Pavlou, 2003; Gefen et al., 2003; Lee & Turban, 2001).

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There are lots of players in the mobile money ecosystem and as a result of this, MNO must ensure that services delivered are consistent and reliable across board and services assured of trust.

H2: Perceived Trust has a positive significant relationship with behavioural intention to use Mobile money (MM)

Perceived Risk (PR)

Tobbin (2011) defined risk as a consumer's belief about a potential uncertain negative outcome from the use of the service. Consumers would want to take minimal risk with their choices. Every consumer is faced with two types of risk in the purchasing decision, uncertainty and eventual negative consequence of the purchase (Chemingui & Lallouna, 2013). According to Koenig-Lewis et al., 2010, there are six different types of risk, performance, financial, physical, social, psychological and time risk and various literature asserts that risk has a direct relationship with behavioural intention(Luarn and Lin, 2005; Wang et al., 2006; Wang et al., 2003; Kim et al., 2009). Koenig-lewis et al. (2010) conducted a study and found perceived risk to contribute to adoption of a service. For a service to be adopted, providers of the service must take into consideration the security and privacy Gerrard et al., (2006) of the service so for instance, in the Ghanaian context, how consumers see MMT in terms of its secureness and confidentiality will determine whether to adopt or not. The higher the risk the less likelihood that the service would be adopted.

H3: Perceived risk has a positive significant relationship with behavioural intention to adopt to MMT

Social Influence

Venkatesh et al. (2003) defined social influence as the degree to which an individual perceives that important others believe he/she should use the technology. In a survey of 158

customers from a major bank in Malaysia, Amin et al. [2008] empirically found that individual intention to use mobile banking was significantly affected by people surrounding them. Like a manner, Singh et al. (2010) discovered that individual decisions to adopt mobile commerce services were influenced by friends and family members.

H4: Social influence has a positive significant relationship with behavioural intention to adopt to MMT

Competitive intensity

Consumers of mobile money transfer have a choice to equally patronise other forms of mobile money service deployed by the various financial institutions in the country. Olivares and Cachon (2009), in their study of auto dealership claimed that competitive intensity would attenuate demand what they termed as the sales effect: increased competition decreases a dealer's sales. Furthermore, with product differentiation and price (standardized by operators) as part of competitive dimensions, they posit that service quality provides a primary basis for competitive differentiation among the other alternatives. Given proximate alternatives to mobile money, customers will likely exercise the option to use these alternatives. This relates to an observation by Olivares and Cachon (2009), who notice that service level increases with competition and speculate that this is because retailers intuit that customers will be able to defect relatively easily in response to low service levels. Customers can simply go to a proximate competitor offering an identical product. They further claimed that operators that engender benevolence trust by being more transparent will be able to attract demand away from a competitor who do not engender such trust. This is applicable in the mobile money service. The researcher hypothesized that;

H5: Competitive intensity is positively significant to behavioural intention to adopt to mobile money services

Perceived ease of use (PEOU)

Perceived ease of use is one of the characteristics of innovation adoption most widely used in ICT context (Wan et al., 2005; Pikkarainen et al., 2004; Hernandez and Mazzon, 2006; Carter and Belanger, 2005; Nysveenetal. 2005b).

A new system is likely to be adopted if it requires fewer manoeuvres to operate. Hence, when a system is complex its use takes a while to be adopted (Rogers, 2003; Brown et al., 2003; Rogers, 2002; Moore and Benbasat, 1991; Eriksson et al., 2008). The determinants of perceived ease of use advanced in the literature include knowledge of mobile money services, self- efficacy, innovativeness, facilitating conditions, and accessibility (Gu et al., 2009, 11610; Schierz et al., 2010, 212). Prior researches have concluded that PEOU is a key determinant to consumer behavioural intentions (Venkatesh & Davis, 1996, 2000; Venkatesh& Morris, 2000 Pousttchi and Wiedemann, 2005; Carlsson et al, 2005).

It is important that MMT is less complex for use by all, making it easy for all ages within the population profile to adopt to it especially in emerging markets like Ghana where remittances is high. , Eriksson et al. (2008) & Cruz and Laukkanen (2010 in their literature confirm that complexity had a significant influence to adoption.

H6: Perceived Ease of Use has a positive significant relationship with behavioural intention to adopt to MMT.

Perceived Cost (PC)

This is a factor that has been added to the existing technology adoption theories in order to sufficiently explain the adoption of mobile based financial services. The cost associated with using a service is one of the key drivers of a user's intention to adopt mobile money. Individuals are likely to adopt mobile money services if they perceive that the cost is acceptable compared to other existing alternatives of the service (Luarn and Lin, 2004; Tobbin, 2012, 82; Dass & Pal, 2011). The financial considerations for using mobile money include the cost of the mobile device, the registration fee and, the transaction fees, Koenig-Lewis et al. (2010). Among the rural unbanked populations, the cost of making transactions has been identified as a key contributing factor to the fast rate of acceptance and adoption of mobile money services (Tobbin, 2012).

> *H7: Perceived Cost will have a negative influence on consumer behavioural intention to use MMT.*

Behavioural Intention

Consistent to all models drawing from psychological theories which argue that individual behaviour is predictable and influenced by individual intention, UTAUT contended and proved behavioural intention to have significant influence on technology usage [Venkatesh et al. 2003; Venkatesh &Zhang 2010]. Given that the ultimate goal of businesses (i.e., banks) is to attract consumers to adopt their services rather than the intention to adopt services, extensive research has examined the relation between behavioural intention and actual use. However, only one work in extant mobile banking studies has taken this relation into the research structure [Sripalawat et al. 2011], which encourages a need to examine the relationship between behavioural intention and actual behaviour in the mobile money setting

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Demographic Variables

Demographic variables, age gender, income and education were used by the researcher to check its influence on behavioural intention in adopting mobile money transfer in the Ghanaian context. Empirical studies conducted on demographics show that the level of education of an individual is found to be directly related to their level of resources, and hence their ability to experiment and adopt new technological innovations (S. C. Chia, Li, Detenber, & Lee, 2006; Van den Bulte, 2000). However, the effect of income and age on innovativeness has enjoyed mixed results from innovation diffusion studies. Whereas Im et al (2003) and Steenkamp, Hofstede, & Wedel (1999) found no significant effect of income, age and education, Tellis, Prabhu, & Chandy (2009) and Rogers (1995) reported a positive correlation. Tellis et al. (2009) in a cross-country study of consumer innovativeness posits that the five demographic variables of age, income, mobility, education and gender are key predictors of consumer innovativeness. Furthermore, studies by Ha & Stoel (2004), Rogers (1995) and (Goldsmith, Freiden, & Eastman, 1995) collectively show that innovative consumers are in general better educated, and younger than the general population, have higher incomes and occupational status, and are more often females than males. Meanwhile, Tellis et al. (2009), (Goldsmith & Foxall, 2003) and Steenkamp et al. (1999) reported a negative correlation between age and consumer innovativeness.

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CHAPTER THREE

CONTEXT OF THE STUDY

3.1 Chapter Overview

This chapter describes the setting within which the study was conducted. The chapter begins with a brief physical setting of Ghana, subsequently, an overview of Ghana's mobile telecommunication, the various policy and regulatory frameworks within the industry and key developments and contributions of the telecommunications industry.

3.2 Ghana (Physical Setting)

Ghana is located on the western coast of Africa, along the Gulf of Guinea and is bordered by Burkina Faso to the north, Togo to the east, Cote d'Ivoire to west and the Gulf of Guinea to the south. The country covers a total landmass of approximately 238,540 sq. km with a population of over 24 million people from 10 regions with Accra as its capital city (Ghana Statistical Service, 2010). According to GSS (2012) reports, the population is expected to have a 2% growth per year to reach 27 million by 2016.

3.3 Mobile Telecommunication in Ghana

Government of Ghana separated the then Ghana Post and Telecommunication Corporation into two different entities namely Ghana Post for postal services and Ghana Telecom for telecommunication service.

Table 3.1: Telecom Voice Subscription, 2015

MOBILE OPERATORS	JANUARY	FEBRUARY	MARCH	MARKET SHARE (VOICE)PER OPERATOR
MILLICOM (TIGO)	4,202,923	4,264,078	4,315,719	13.85%
SCANCOM (MTN)	13,939,936	14,113,432	14,207,778	45.60%
VODAFONE MOBILE	7,177,032	7,300,497	7,159,566	22.98%
AIRTEL	3,751,135	3,808,747	3,863,252	12.40%
GLO MOBILE	1,438,929	1,422,113	1,481,903	4.76%
EXPRESSO	119,649	119,386	126,202	0.41%
TOTAL MOBILE	30,629,604	31,028,253	31154420	100%

Source: National Communication Authority(2015)

The resultant effect was the advent of Vodafone formally Ghana Telecom. Ghana Telecom was partnered by a Malaysian Telecommunications Company in the early 1990s revived fixed telephone lines for homes and businesses which hitherto customers had to queue in front of post offices to access telephone service. To increase access to consumers, the regulator National Telecommunication Authority (NCA) licensed Milicom Ghana now Tigo and Spacefon now MTN to provide mobile telecommunication service. The above organizations including Vodafone pioneered rapid distribution of the new innovation (mobile phone) to Ghanaians between 2001 and 2007. These firms relied on creative integrative marketing communications, competitive pricing with market oriented

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distribution strategies to increase the adoption of mobile phones by Ghanaians. Currently, the sector can be described as very competitive with three additional players; Airtel, Expresso and Glo providing similar voice and data telecommunication services supported by heavy promotional budgets. Initially, the Telco's targeted high net-worth middle income individuals. However, it is obvious that mobile phone has become a necessity hence being used by most Ghanaians. (Frempong and Henten, 2004)

Total cellular/mobile voice subscriber base in Ghana as at March, 2015 stood at 31154420. MTN leads with a subscriber base of 13,939,936 representing 46% followed by Vodafone 7,159,566 representing 23 % and Tigo 4,315,719 representing 14%. Airtel, GLO and Expresso recorded 12%, 5% and 1% market share respectively. Three out of these operators are into mobile money transfer service. MTN mobile money, TIGO Cash and Airtel Money.

3.4 History of mobile money transfer in Ghana

According to the World Bank (2011) about 70% of adults' population in Ghana do not have an account at a formal financial institution. The poor and unbanked roughly one-third of the world's population rely mostly on physical cash when transferring money. Similarly in Ghana, people relied on relatives and bus conductors in sending money to friends and families.Thus, the velocity of money is limited by how fast cash can be physically transported, by foot or by bus in most circumstances (Batista and Vicente 2013). This limitation is a critical disadvantage to the poor when money is needed most in Ghanaian communities where remittances play a vital role as a result of rural-urban migration. At these decisive moments, friends and family willing and able to transfer money must rely on expensive and/or unreliable methods such as bus money transfer services (Morawczynski 2009). Furthermore, saving for these pivotal moments is more challenging with inferior

savings tools: to store and save money, most either hide cash in their homes (at risk of theft and ineligible for interest), or purchase relatively illiquid assets like gold or livestock (that are often sold at a loss in times of need) (Collins et al. 2009). One study found that among a large sample of the poor in Uganda, 75% had lost some portion of their cash or physical asset savings in the previous year (Wright & Mutesasira 2001).

The poor in emerging markets like Ghana, especially those living in rural areas, remain unserved by formal financial institutions because their low balances and transaction sizes yield little revenue for banks (Mas 2010). Furthermore, because the rural poor live in definitional low density and remote areas, these regions lack the scale to make the provision of traditional financial services an attractive proposition. Consequently, financial institutions have largely found it impractical to profitably serve the poor in the developing world (Kendall 2011). The rapid growth of cellular networks in Ghana lays the groundwork for a potential paradigm shift in financial services for the poor.

.As the number of mobile phone subscribers in Ghana increases, so does the market for mobile money services. Products like "mobile money," that enable safe and secure money transfers without the use of a bank account, could have a major impact on this unserved segment of the population. Mobile money gives anyone with a mobile phone the ability to transfer money, make cash payments and conduct other financial transactions over the phone.

Mobile money is a relatively new phenomenon in Ghana. It was first introduced by the telecom company MTN in 2010 followed by Tigo and Airtel in 2011(www, bog.gov).

3.5 Competition in the Industry

Over the past decade, there has been a significant increase in the number of alternative channels available for the delivery of financial services. Traditional delivery methods have given way to new delivery technologies.

The telecommunication companies and banks are introducing new ways for consumers to access their account balances, transfer funds, pay bills, and buy goods and services without using cash, cheques or leaving home (Frei et al., 1998).

Various authors such as Singh (2006), Im et al. (2003) posit that innovation has become one of the most attention-grabbing subjects, drawing the interest of business and economic researchers due to its ability to give firms a competitive advantage

Liberalised domestic regulations, intensified competition, rapid innovations in new financial instruments, and the massive growth in information technology have fuelled the growing desire in financial services (Frei et al, 1998)

According Orozco et al, 2007), the mobile money transfer (MMT) is an innovative device from an aspect of an electronic payment and banking industry referred to as mobile banking. As a result of this, various financial tools are equally competing with the mobile money transfer technology. Below are some of its competing products;

E-zwich
E-zwich is the brand name for the National Switch and Smart card payment system. When the Ghana Interbank Payment and Settlement System (GhIPSS) launched the e-zwich in April 2008, the then Governor of the Bank of Ghana, described it as having been primarily designed

"...for promoting branchless banking and financial inclusion." The e-zwich payment system is an innovative method for improving accessibility to banking and retail services in Ghana. The e-zwich system offers deposit-taking financial institutions (i.e. Universal commercial and merchant banks, rural banks and savings and loans) a platform that enables them to interoperate. This therefore, enables e-zwich cardholders to perform banking and retail transactions at the outlets of other e-zwich financial institutions. As an e-zwich cardholder, a customer has available to them a large group of banks and their branches where e-zwich transactions can be performed. It is therefore no more necessary to commute to a specific bank just to do banking transactions. The e-zwich was designed to facilitate the mobility of funds from one station to another without actually using cash but electronic transfer. This makes it easier for business and facilitates the quick transaction of business deals, arrangements and agreements. The e-zwich smart-card is currently the only card in Ghana that provides the convenience of nationwide access as well as greater control over transactions for cardholders, retail merchants and other corporate users (IMANI, 2009).

Zenith mobile banking (Z mobile)

Zmobile is a mobile banking service from Zenith bank. Zmobile (meaning Zenith mobile) enables customers of Zenith bank to carry out various banking and payment transactions with their mobile phone. Some transactions currently supported by Zmobile include balance inquiry, mini statement, bills payment, local money transfer, mobile phone top up, inter-bank money transfer, and so on. Zenith bank also offers Internet banking services, which allows take care of most of the banking needs online. Zmobile is a menu based mobile banking service. The menu looks like your ATM menu or the Glo Magic plus menu. All you need to do is to select the transaction you want on your mobile phone menu and enter your security access details; the Zmobile system does the rest.

Mobile Money service has rapidly taken its place in the telecommunication sector and also in the banking sector. Zain Ghana introduced Mobile Money in Ghana in early 2000. This was a service only available to Zain network subscribers who had registered for this particular service. It was known as Zain Zap, which allowed those registered on it to manage their monies and perform basic financial transactions. This however did not get much patronage and soon faded out. Afric Xpress, noted as one of the pioneers in this industry launched in 2008 a service commonly known as TXTNPAY whose long-term objective is to turn every mobile handset into an electronic wallet. This service uses SMS based application technology therefore cutting across all networks and mobile handsets. The service enabled its users to send money to anyone with a mobile phone, pay bills, buy prepaid airtime and check their bank balance and purchase goods and services. (Afric Xpress, 2008)

E-Tranzact

E-Tranzact also provides mobile payment services such as top up airtime purchase, banking services, subscription payments, bill payments and other services using a mobile phone, registered E-Transact card holders get to enjoy all these services on their mobile phone.

3.6 Overview of guidelines of Branchless Banking and regulatory Framework in Ghana

The bank of Ghana is promoting an enabling environment to create branchless banking towards the achievement of a cashless system thus creating a competitive environment and also providing financial inclusion for the unbanked. This initiative has created enabling environment for mobile money transfer and other methods of payment systems

Branchless Banking (BB) represents a significantly cheaper alternative to conventional branchbased banking that allows financial institutions and other commercial actors to offer financial services outside traditional bank premises by using delivery channels like retail

agents, mobile phones etc. BB can be used to substantially increase the financial services outreach to the unbanked communities. These guidelines are being issued as part of the broader strategy to create an enabling regulatory environment to promote branchless banking. The primary audience of these guidelines is deposit-taking financial institutions (bank and non-bank) desirous to undertake branchless banking. However, as financial institutions cannot take on BB without the help of other market players like telecom companies, technology service providers, agents etc., these guidelines are also helpful for other parties to understand their roles and responsibilities.

The guidelines for branchless banking set out by the Bank of Ghana are aimed at achieving a number of objectives:

Promoting financial inclusion without risking the safety and soundness of the banking system.

•Extending core banking services to the domain of everyday transactions.

•Ensuring that the common platform for the payments and settlement system (e-zwich) established for deposit taking financial institutions (FIs) extends to branchless banking.

•Ensure that banking services provided under branchless banking are provided by regulated deposit-taking financial institutions or their agents.

•Ensure compliance with Ghana's Anti-Money Laundering Act as well as the Anti-Money Laundering and Financing of Terrorism (AML/CFT) standards as set by the Financial Action Task Force (FATF).

•Ensure a wide participation of deposit-taking financial institutions (i.e. banks and non-banks) including commercial banks, rural banks, savings and loans and microfinance institutions in the provision of branchless banking services.

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•Ensure that all branchless banking transactions are cleared through the settlement system.

•Ensure that all customers using branchless banking services can be identified.

Scope

These guidelines are applicable to deposit-taking financial institutions (herein after collectively referred to as financial institutions or FIs). Activities outlined in these guidelines as branchless banking cannot be offered by any person or institution other than deposit-taking financial institutions (FIs). All FIs desirous to offer branchless banking services may do so in line with these guidelines. These guidelines do not, in general supersede or revoke any of the existing Laws, rules & regulations unless specifically stated. Further the scope of any such relaxation of rules and regulations will be limited to Branchless banking only and shall not extend to cover any other banking activity Branchless Banking Models and Activities Branchless banking is only allowed to be undertaken by licensed deposit-taking financial institutions (bank and nonbank) or their agents. Furthermore, all customers of FIs undertaking BB activities must be uniquely identified.

Branchless banking can be done using agents like Telcos, Fuel distribution companies, Merchants, Post Office, etc. and using technologies not limited to mobile phone (like GPRS, POS terminals etc.). In each case customer account relationship must reside with some FI and each transaction must hit the actual customer account (www.bog.gov.gh).

CHAPTER FOUR

METHODOLOGY

4.1 Introduction

This chapter discusses the processes and techniques used in carrying out the study in order to answer the research questions to achieve the objectives of the study. It gives a description of the respondents including information on the study population and sampling techniques. It also provides an outline of the research design and instruments for data collection. The methods adopted in the administration of the research instrument, data collection procedure and data analysis are also looked at in this chapter.

4.2 Philosophical perspectives

Philosophical perspective for Saunders *et al.* (2007), assumes a clear assumption which entails the researchers plan and approach to create knowledge within a specific context, while Easterby-Smith (2008) argued that methodological philosophy has to do with examining the basis for relevant ideas .Saunders *et al*., 2009 posit that, the most important subject in research, is the provisioning of a significant justification on the chosen philosophies and defending the rationale against other choices, rather than a research just being philosophically conversant. The main reason for this is to prevent the assumption that one research philosophy is superior to another, when practically each method or philosophy is superlative at doing different things subject to the research questions (Bryman and Bell, 2007).

4.2.2 Epistemology Perspective

Bryman et al (2008) opines that epistemological perspective entails, "searching into the world's nature, what valid knowledge is all about, and a possible constituent" and this

occurs as a result of the epistemological approach being the science of the foundation of knowledge, this was also supported by Donald and Pamela (2003). Moreso, Saunders *et al.* (2007) described epistemology as being concerned with the type, span and soundness of knowledge used in a certain field of study. Cruise (1997), also argued that epistemology is about the study of knowledge, and the type of things that can be classified as knowledge, while Eldabi *et al.* (2002) opined that it is about the construction of beliefs. In addition, Marsh and Furlon (2002) argued that epistemological positions unlike the ontological position, shows or reflect the world's viewpoint. The philosophies discussed in the next sections are characteristics of the epistemological perspective (Saunders *et al.*, 2007).

Positivism philosophy

According to Collis and Hussey (2009), the positivism beliefs instigated from the field of natural sciences, and its theory posits an independence of the topic under research. For researches based on a theory that stems from the positivism, there exists a great focus on theories to be able to predict a social phenomenon (Collis and Hussey, 2009). Positivism was however described by Saunders *et al.* (2007) as the "epistemological position that advocates working with an observable social reality" In addition Jupp (2006) stated that it can be viewed as the "methodological underpinning of survey research and experimental approaches". Blumberg (2005) also added some criticisms to the positivism philosophy and acknowledged that without examining the perception they have of their own activities, individuals cannot be understood. He also stated that people cannot be separated from social contexts in which they are present. However, positivist pans the interpretivists as not being completely objective, but part of a process in research (Carcary, 2009). Furthermore, Jancowicz (2005) opines that "in contrast to the interpretivists who consider perceptions, feelings, external environment and personal beliefs, the positivists argue that proceedings

through rational deduction can be found by anyone following similar methods, noting that the outcome is independent of the individual exploring it".

Interpretive Philosophy

Cooper and Schindler (2003) recognized the main field for an Interpretivism philosophy as, the capability to observe and recognize the world from the subject's point of view. Collis and Hussey (2009) also argued that the theory of the interpretive philosophy is that, there exist a mode of interaction between the researcher and topic under research. Saunders *et al*. (2007) further stated that, there is a restraint for every philosophy, and on the basis of Interpretivism, there is an issue of its difficulty and bias in a number of related studies. In addition, researchers negative about positivism, asserts that in order to match the complexity of this world, a good insight needs to be maintained and that such complexity must not be lowered completely to 'law-like' generalizations and this view was noted by Saunders *et al*. (2007) to be the interpretivist's view. Nevertheless, Saunders *et al*. (2007) defined interpretivism as "the epistemological position that advocates the necessity to understand differences between humans in their role as social actors", while Bryman and Bell (2007) suggests that it identifies the gap between carrying out research among people instead of on objects such as cars and clothes. However, Saunders et al (2007) described the phrase 'social actors' as a metaphor used to make implicit comparison of humans, e.g. like in the theatre, playing a role on the stage of human life where the actors get scripts from their producers and act it out on stage in a meticulous way depending on how they interpret such scripts (Saunders *et al*., 2007).

Realism Philosophy

Realism is defined by Saunders *et al.* (2007) to be "the epistemological position, in which objects exists independently of our knowledge of their existence". Saunders *et al*. (2007)

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suggests that the realism theory "asserts that real structures exist on its own, based on the consciousness of human" and both the positivist and Interpretivism philosophical approaches can be used to gain a better understanding of the subject. Bryman and Bell (2007) also argued that the realism philosophy paves a way for a chance to understand the beliefs and thoughts of individuals, to be assessed from a wider context. This brings about easy validation and replication of data, due to combining the philosophical approaches of the Interpretivism and positivist. Although the realist epistemology assumes that there are usual sequences in human and organizational department, but these are sometimes hard to identify and very hard to explain due to the amount of circumstances and determinants that might create the observed result (Easterby-Smith *et al*., 2008). Bryman and Bell (2007) further posits that the positivist and realist epistemology are slightly similar in their scientific approach, and possesses the same belief on the gathering of data and considers factors outside the primary subject (Easterby-Smith *et al*., 2008).

The realism theory therefore, is seen suitable for this research as it ensures the consideration of customers based on their evaluation of the factors they consider when using mobile money in Ghana, adopting a relevant theory as a foundation for the prediction of phenomena, including carrying out an assessment to augment an understanding from the subject's viewpoint (Cooper and Schindler 2008).

4.3 Research Purpose

A research purpose provides the basic direction for carrying out the research. Basically, in social research, there are three categories of research purpose: exploration, description, and explanation (Saunders et al. 2009). These categories differ in several aspects including the way research questions or hypotheses are formulated, and the way data are collected.

Exploratory Studies

This type of research is typically used when a researcher examines a new interest or when the subject of study itself is relatively new. The major emphasis of exploratory research is on the discovery of ideas and insights (Saunders et al. 2009). The research questions or assumptions might be difficult to understand because the phenomenon of interest is considerably new and unfamiliar to the researcher. More information is needed to clarify the concept and scope of the study and to make the researcher understand the problem better. The exploratory research could be conducted through a number of techniques including literature review, interviews, focus group and case study.

Descriptive Studies

Descriptive research is employed to provide an accurate snapshot of some aspect of the observed persons, events, situations, and environments. Descriptive research is conducted to describe situations and events. The researcher observes and then describes what was observed (Babbie, 2004). This type of research purpose is frequently used when a problem is well structured.

Explanatory Studies

The focus of this research purpose is on studying a situation or a problem in order to explain the relationships among variables (Saunders et al. 2009). It is concerned with determining cause-and-effect relationships. Explanatory research aims to develop precise theory that can be used to definitively explain the phenomena, which leads to the generalization from the research. Does a change in one event bring about a corresponding change in another event? Since there is fairly no studies conducted on the area under study with respect to the product

and the contextual area, this study is purposed on an exploratory basis with the intent of discovering an idea and gaining insights in a specific aspect of consumer's behaviour.

4.4 Research approach

In order to make suitable decisions and reducing uncertainties, an approach to the conducting of research is undertaken. While one can easily be intent into assuming that a particular approach is better than another, all approaches are better in various ways in doing different things (Saunders et al., 2007). Bryman (2008) also stated that a research study should be based on fundamentals which are developed on empirical, non-empirical, or a combination of both approaches and according to Blumberg (2005), there exists three empirical approach which include the qualitative and quantitative, deductive and inductive, subjective and objective

4.4.1 Quantitative and Qualitative approach

The quantitative approach has been branded in the literature as one with traditional, positivist, and the experimental or empiricist paradigm Smith (1983) .

According to Saunders et al., (2007), the quantitative approach is a simple phrase where its outcome is portrayed in figures. In another study, Horna (1994) argued that it can be categorised by the deductive logic of natural sciences where simplifications which are law like, presents the foundation for the explanation of the behaviour of individuals. In addition, quantitative approach is all about developing hypotheses and theories which can be tested and also generalised across settings (Collis and Hussey, 2009) and can also be used to measure ''how much'' or ''how often''. Similarly, Neuman (2004) also added that,

quantitative research employs the use of a deductive model so as to examine variables and hence provide results which can then be evaluated against the developed hypotheses.

On the other hand Saunders et al. (2007), described the qualitative approach as one used to express and describe outcomes in words. However, Miles and Huberman (1994) added that it entails strong contact with an actual situation, which typically reflects the daily life of individuals, groups, societies or organisations. More so, the qualitative approach is appropriate for discovering, investigate new areas and is useful when one needs to supplement, explain, illuminate or reinterpret quantitative data gathered from the same setting (Amaratunga et al. 2002).

The mixed-method involves collecting and analysing quantitative and qualitative data in a single study (Creswell, 2009). Also referred to as the methodological pluralism or triangulation, the mixed-method research emphasizes on the use of both qualitative and quantitative methods, and has been used in conducting research related to developing countries (Ibeh & Young, 2001; Jogulu & Pansiri 2011).

The mixed-method approach is also influenced by the observations and findings of several authors on its merits. Aina (2002) posits that quantitative and qualitative approaches have their own particular weaknesses or biases, thus, it is ideal to use multiple methods, supplementing with each other to counteract bias and generate more adequate and balanced data. This suggestion has been confirmed by authors such as Commonwealth of Leaning (2012); Okpara and Wynn (2008); Creswell and Plano-Clark (2007); Tashakkori and Teddie, (2003); and Rocco, Bliss, Gallagher and Perez-Prado, (2003). For instance, Creswell and Plano-Clark (2007) indicated that qualitative and quantitative approaches are used to reinforce each other; hence the overall strength of a study is greater when the mixed-method

approach is used. Okpara and Wynn (2008) have also observed that studying more than one organization or entity have certain challenges due to the cultural, business practice, and communication differences of research respondents. As such, mixed-methods help to prevent some of these challenges. The Commonwealth of Leaning (2012) concurs with Okpara and Wynn (2008), when they indicated that using multiple approaches can capitalize on the strengths of each approach and offset their different weaknesses. Finally, Rocco, Bliss, Gallagher and Perez-Prado (2003) also found out that going beyond the use of a single approach provides more comprehensive data analysis.

For the purpose of this study mixed method is adopted for the study, qualitative approach was to enable the researcher have an in depth understanding by talking to the three mobile money operators with regards to the service, implementation, adoption issues, challenges and strategies employed by the three operators and based on this a quantitative data as stated describes 'how much' or how often and permits for statistical analysis on the collected data. This approach was used to evaluate 'how much' customers of mobile money services in Ghana have adopted to the service based on their perceptions. The findings from each level was merged together during analysis and into one overall interpretation for better understanding of the problem than if either dataset is used (Creswell, 2009).

Inductive versus Deductive

Researchers approach the building and testing of theory from two directions; deductive and inductive (Neuman, 2006). The inductive approach typically moves from specific observations to broader generalizations and theories. The researchers may begin with specific observations and measures, to detect patterns and regularities, and then formulate some tentative hypotheses that they can explore. They might end up by developing some

general conclusions or theories. The study of a small sample size of subjects might be appropriate (Saunders et al. 2009). In contrast, a deductive approach commonly works from the more general to the more specific. The deductive research approach begins with abstract logical relationship among concepts and then moves towards concrete empirical evidence (Neuman, 2006). Researchers might begin by examining theories related to their topic of interest. They then narrow those theories down to more specific research questions or hypotheses that can be tested. Then, the researchers answer questions or confirm hypotheses through a number of research methods, mainly in quantitative ways in order to be able to generalize the findings (Saunders et al. 2009). These two approaches are different ways to conduct research. In short, the difference between two approaches is that one is building the theory (inductive) while the other one is testing the theory (deductive). The selection of approach depends on the extent to which existing knowledge and theories are available related to the topic of interest .

4.5 Research Strategy

A research strategy is an all-purpose method the researcher anticipates using, in order to answer the research questions effectively. Thornhill *et al.* (2003) opined that a research strategy includes clear objectives which are obtained from the research questions, to specify the basis that will be used to gather data and also put in consideration the limitations associated with the research, and includes time, money, data access, location and other ethical issues.

4.5.1 Survey

The survey is usually related with the deductive approach, and is a frequently used method in a research (Seyed, 2008). It entails gathering a large quantity of data, which includes

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questionnaires, semi-structured interviews and structured observations in a highly efficient manner, appropriate for the study (Thornhill *et al*., 2003). A survey can also be used for collecting primary and secondary data from a sample size according to Collis and Hussey (2009), by assessing them in figures and simplifying the results to a population.

4.5.2 Case study

A case study is a method employed in a research, involving an empirical analysis of an event that exists within the field of a situation in real life by searching for evidence as stated by Robson (2002). Yin (2003) stated the significance of background, and suggests that the evidence in a case study exists, amid the event in consideration and the conditions within which it is being studied which is not visible. The case study is also assumed to be necessary in a study that was executed to broaden the researcher's understanding of the topic

4.5.3 Experiment

Experiment is used in both natural and social science research. Experiment tends to be used in exploratory and explanatory study to answer ―how and ―why questions (Saunders et al. 2009). Two groups are set and members in each group are basically similar in all aspects. The researcher uses one group as the experimental group and another one as the control group. At the beginning, the dependent variable is measured for both groups and the two measurements are compared with each other. Then, the researcher places some form of planned intervention or manipulation only to the experimental group. The intervention or manipulation is the independent variable. Finally, the dependent variable from each group is re-measured. The researcher is now able to compare the results before and after the manipulation of the independent variable for both the experimental and the control group. This allows the researcher to see if there is a causal relationship between the independent

and dependent variables. This experimental research strategy can be conducted in either laboratory experiments or field experiments (Saunders et al. 2009). In business disciplines, an experiment strategy could be used in several ways but this research strategy is typically expensive and complicated.

4.5.4 Action research

Action research is a study associated with a particular project and problem (Coghlan & Brannick, 2009).The objective of this research can be finding immediate solution for a problem faced in a society. Therefore we can say that action research is concerned with actual life. It studies the 'what', 'how', and 'why' of actual life. In short it is an attempt to understand the present issues and a way to predict the future changes (Jonker & Pennink, 2009).

4.5.5 Grounded theory

Grounded theory is a qualitative research study. It is mainly used in the social sciences. When the traditional scientific method looks to start the research with a hypothesis this method adopts the system of going directly into the data collection first. All the data collected are placed in different codes to identify common factors. From the group of these codes then a theory is formed (Charmaz, 2006).

4.5.6 Ethnography

Ethnography is a unique qualitative research method. In this study the researcher will stay in the research location. The researcher stays with the population and get a first-hand information from the particular culture or group (Murchison, 2009).

4.5.7 Archival research

This means the entire study will be based on the materials of the study kept in some archives by some other researchers. In this strategy a huge quantity of data is available and so often the data remain uncontrollable. Therefore it is not possible to make casual conclusions on the basis of such types of data (Graham, Towl &. Crihton, 2010).

4.6 Research design

Research design is defined as the procedure(s) for collecting, analysing, interpreting and reporting data in research study (Creswell &Plano Clark,2007)It can also be considered as the overall strategy or blueprint underpinning the research(Ghauri & Gronhaug, 2005; Malholtra, 2006). According to (Rowley, 2002), design preferences for research is based on the aims and purpose of the research prepositions, the degree of knowledge and research viewpoint while Saunders *et al.* (2007) stated that research design offers the constructs for collecting and assessing data needed for research. In addition, Remenyi (2002) stated that management researchers tend to struggle when trying to choose a suitable technique and strategy. Research designs are placed into various categories such as explanatory, descriptive and exploratory research (Ghauri and Gronhaug, 2002; cited in Jancowicz, 2005). Broadly, research design could be divided into two groups; exploratory design and conclusive design. Whereas exploratory design can either be quantitative or qualitative in nature, conclusive research design constitutes either a descriptive or causal research.

4.6.1 Explorative research

Exploratory research is mostly used when marketing research areas are inherently difficult to measure, especially in a quantitative manner (Malhotra & Birks, 2007). It may also be used in areas where it is necessary to define the problem more precisely, identify relevant

courses of action, or gain additional insights before going on to confirm findings using a conclusive research design (Malhotra & Birks, 2007). The exploratory research design is seen as being versatile and flexible in respect to the methods being used. The marketing researcher responds to ideas and insights from the research object and may change the research techniques according to what type of information he is aiming to get. Exploratory research is used when little is known about the subject or problem which want to be analysed, general when the problem needs to be defined more precisely and when the subject of the study cannot be measured in a structured manner (Malhotra & Birks, 2007). It is not necessary to always begin with exploratory research, because it depends on the precision with which the problem has been defined. Exploratory research may be categorized into either descriptive or causal research.

4.6.2 Causal research

Causal research design is a form of conclusive research, where the major aim is to analyse the cause and effect relationship. It includes defining which variables are the cause and which variable is the effect in connection to marketing phenomena (Malhotra & Birks, 2007). Furthermore this kind of research tests hypotheses and like descriptive research, also uses planned and structured designs. The most used method of causal research is experimentation (Malhotra & Birks, 2007).

4.6.3 Descriptive research

The descriptive research is characterized by specific research questions and often hypotheses. The research is mostly well planned and highly structured. That is possible, because the information needed is clearly defined. The most significant difference between

exploratory and descriptive research is the formulation of a hypotheses and research question early in the research process.

4.6.4 Conclusive research

Conclusive research design is characterized by the measurement of clearly defined marketing phenomena (Malhotra & Birks, 2007). The descriptive research design represents one type of conclusive research design. This kind of research aims at describing something which is often market functions and characteristics (Malhotra & Birks, 2007).

This study employs a survey design approach. This survey is usually related with the deductive approach and is a frequently used method in a research (Seyed,2008).The design has the potential to provide the researcher with a lot of information obtained from quite a large sample of individuals within the area of study (Fraenkel & Walled, 2000). It will be impractical to sample the views of all customers of mobile money in the Ghanaian market hence, the design is chosen to collect the views of a representative pool within the population.

To add to the reason for using survey research is that, it has the potential to provide the researcher with a lot of information obtained from quite a large sample of individuals within the area of study by assessing them in figures and simplifying the results to a population (Fraenkel & Walled, 2000; Collis & Hussey 2009).

4.7 Research design for the study

In the context of the above discussions this research is undertaken with a realist's philosophical position. Furthermore, the current research used sequential mixed method to carry out the study. This involved beginning with a qualitative interview for exploratory

purposes and follow up with a quantitative, survey method with a large sample so that the researcher can generalize results to a population, through the use of a questionnaire. This thesis adopted the survey strategy because the study is cross-sectional in nature and previous cross-sectional studies have mainly employed the survey strategy (such as Easterby-Smith et. al., 2002; Robson, 2002; Holt, 2006; Bughin et al., 2010). The choice for this research design therefore became necessary not only due to the exploratory nature of the study but also because it has been found to be suitable for analysing a phenomenon, situation, problem, attitude or issues by considering a crosssection of the population at one point in time (Robson, 2002; Lin and Chang, 2003; Litvin et al., 2008). Again the suitability of using the survey strategy in this study is to help the researcher identify and explain statistically, the factors that explain customer behavioural intention to adopt to mobile money services in Ghana. The research problem was formulated based on existing theory, and the intention is to create more knowledge about specific factors. For this reason, a deductive approach has been adopted in this thesis. This research tests relevant hypotheses stated earlier in the research process and is therefore based on conclusive research .

4.8 Population of the Study

A population or universe of investigation may be considered as the total number of units of the phenomena to be investigated that exist in the area of investigation, which is all possible observations of the same kind that a sample is acquired from Kumekpor (2002);Bryman & Bell (2007). Firstly, the choice of Accra metropolis was made because, Accra being the commercial capital city of Ghana is where the urban-rural remittances is prevalent. Secondly, the rationale behind the choice of location was the fact that the head offices of the three mobile operators are located in the Greater Accra Region as well as the researcher's

proximity or convenience to the selected sample as compared to conducting the research outside the Greater Accra Region.

4.9 Sample Size and Sampling selection

Corbetta (2003) described sampling as "observing a part in order to gather information about the whole is an almost instinctive human act". It is a deliberate selection of a number of units to denote a bigger population (Anderson, 2004). Therefore, Saunders *et al.* (2009) suggested that a sampling process is required to aid in organising the study to a controllable size, where Bryman and Bell (2007) divided sampling method into two parts, which include probability and non-probability sampling. The Probability sampling units are selected by chance and include cluster sampling, random sampling, systematic sampling, while the Non-probability sampling is dependent on the individual judgement of the researcher, for selecting the sample units required which includes; purposive sampling, convenience sampling and quota sampling (Saunder *et al.*, 2009; Collis and Hussey, 2009).

Furthermore, Johnson and Gill (2002) suggests that a study that entails a large population size would not be possible and not viable for individuals to participate, as it is not a census. This research will focus on m-money users in Ghana. The population size chosen for this research was set for three hundred (340) m-money users, but data gathered recorded response from three hundred and twenty (320) respondents, representing 94% of the sample size which showed a good data for analysis (Malhotra and Birks,2007) .

This sample was considered appropriate based on recommendations of Hair et al., (2006) who consider sample sizes of 100 and above as appropriate for quantitative studies. The sample was selected using a non-probability sampling procedure. Non-probability sampling

can be grouped under techniques such as quota, purposive, snowball and convenience sampling. Quota sampling involves selection of cases within strata that are entirely non-random (Saunders et al., 2009). Purposive or judgmental sampling involves selecting cases based on the researcher's judgment and convenience sampling involves selecting haphazardly those cases that are easiest to obtain for a sample (Saunders et al., 2009).

For the quantitative study, a combination of convenience/judgmental and purposive sampling techniques were employed. The major motivation of these sampling techniques were due to the fact that samples have to be determined on the research field. Hence apart from the researchers intention of administering questionnaires to users of the service, other consideration such as availability of respondents was considered in the questionnaire administration.

The sample for the qualitative study also employed a non-probability sampling technique. However, unlike the quantitative study, the non-probability sampling technique was strictly

Purposive. This is because the researcher had a specific reason for sampling the respondents. Accordingly, the qualitative interviews were conducted with 3 respondents comprising respondent each from the three mobile operators. The respondents were made up of 3 management members, drawn from leadership positions of companies

4.10 Sources of Data

There exist two sources of data for every research. These data sources are primary and secondary data sources. Primary data are data collected with a given purpose in mind (Yin, 2003). In line with the research design the study employed primary sources of data for the data collection. Primary data sources consists of data originated by the researcher for the

specific purpose of addressing the research problem, whereas secondary data refers to data collected for purposes other than the problem at hand (Malholtra, 2006). Therefore, for the current study both primary and secondary data was relied on. Primary data as related to consumer behaviour and intention to adopt mobile money transfer services in Ghana.

For the secondary data, the sources included data that has already been gathered and assembled for other purposes than the current research problem (Yin 2003; Hair et al., 2006; Saunders et al., 2009). Saunders et al., (2009) argues that the advantage of secondary data is that it is usually collected at a lower cost and more rapidly than primary data. However, researchers may face a challenge with its use as more often than not it does not serve the purpose for which a given research was instituted (Hair et al., 2006). Nevertheless, secondary data such as online data source from the bank of Ghana, relating to the statistics of mobile money in Ghana and others were employed for the present study as it complimented the primary sources of information. The section that follows details the major decisions on data collection methods and the questionnaire design for the study.

4.11 Data Collection Method

Data collection is a very significant aspect of every research study and if data is gathered inaccurately, could lead to an invalid result. According to Tashakkori and Teddlic (2003), data collection is used when trying to derive data that will be used for making decisions and keeping records and has different methods which comprise of interview, questionnaire, and observation.

Data was collected in few commercial centers such as Kasoa, Weija, Accra Central, Korle-bu, McCarthy Hill, Achimota, Awoshie, Dansoman from April to May 2015.The

questionnaires were administered by personally approaching consumers made up of students, businessmen and women at various agents points who came to transfer money. For the illiterate, the researcher translated the questionnaire from English to Twi (a native language). Since the study is mixed method approach, both self-administered questionnaires and personal interviews were deemed appropriate for data collection. The next section details the data collection in details.

4.11.1 Questionnaire

A survey approach via a structured questionnaire for collecting data was used for the quantitative method employed. Saunders *et al*. (2009) opined that questionnaires are important when trying to achieve the answers to group of questions, and Kumar (1999) in another study, defined questionnaire as, a list of questions with which a respondent is expected to read, give an interpretation to what is expected and then select the option that best suits the question.The questionnaire survey offers a range of benefits, e.g. the respondents can choose a set of responses, which are easier to analyse and compare (Patton, 2002).

It is an effective tool to gather opinions, attitudes and descriptions, as well as, for getting cause and effect relationships (Malholtra 2007; Ghauri & Gronhaug, 2005). Some of the advantages of the questionnaire includes ease of administration, and also, in the reliability it offers due to the fact that the responses are limited to stated alternatives (Malholtra, 2007). Having settled on the survey strategy as data collection method, the next decision to make is choosing the actual means of obtaining information from the respondents. There were several options available to the researcher. These options included; personal interviews, telephone interviews, observation of participants or self-administered questionnaires (Yin,

2003). However, since the researcher wanted to particularly test relationship between variables using the quantitative approach, a self-administered questionnaire was deemed appropriate for data collection. The section that fellows details how the questionnaire was developed or designed.

4.11.2 Questionnaire design

The survey instruments developed for this study used a multiple item, Five-point Likert scale ranging from 1 "strongly agree to 5 "strongly disagree. The items in the survey were developed by adapting existing measures validated by other researchers in mobile banking and mobile payment environment, or by converting the definitions of the construct into a questionnaire format. The items for the constructs; PU(Perceived Usefulness) were adapted from Chen (2008), Wang and Barnes (2007);   PEOU(Perceived Ease of Use) were adapted from Liao et al.,(2007) ,Cheng 2008,Wang and Barnes (2007); PR (Perceived Risk) items were adapted from Dalhberg et al.,(2003) and Cheng 2008 and modified for mobile money transfer; PC(Perceived Cost) were adapted from Constantinides et al., (2004). Luarn and Lin (2005) and real world experience .PT(Perceived Trust) were adapted from Gefen et al.,(2003); Davis (1989);; Kurnia et al (2006); Pikkarainen et a.,2004;Venkatesh et al., (2008); Cheng (2008); Stewart (2003); Pennington et al. (2003)),modified for mobile money transfer, others were created to suit the Ghanaian environment and behavioural intention created from real world experience. Social Influence and Competitive intensity were also created from their respective meanings. In total 38 items for 8 variables were developed. The PU construct is measured using 6 items (PU1-6); the PEOU is measured by 6 items (PEOU1-6). PT is measured using 3 items (PT1-3). The PR construct is measured using 4 items (PR1-4), TC is measured using 5 items (TC1-5).The Behavioural Intention

construct is measured using items (BI1-6). SI construct is measured using 4 items (SI 1-4) and CI construct is measured using 4 items (CI 1-4).

The survey questionnaire consisted of four sections. Section A aimed at gathering information relating to respondent mobile phone usage. Section B was aimed to measure the respondent's mobile phone experience, which was based on the sum of the various usage indicated. Section C was limited to gathering information on the respondent's usage of money transfer service in the past. Section D was aimed at obtaining information on whether the respondent has used or intended to use mobile money transfer and what factors are likely to influence their adoption decision. The section is subdivided into the various constructs with a total of 33 items ranging between 5 and 6 items per construct.

4.11.3 Semi - Structured Interview

According to Saunders et al. (2007), interviews can be described as, a conversation sought by the interviewer, with subjects chosen on the strengths of a data collection plan in adequate numbers, having a cognitive purpose which is led by the interviewer on the basis of a standardised or flexible conversation pattern.

Kumar (1999) posits that interviews are appropriate for collecting data, as they allow for changes to be made to the way the interview is being performed, so as to acquire a suitable response, which was supported by Zikmund (2007) who added that using interviews for data collection is an important method of noting the opinions of individuals, needed for a research study. The features of Interviews, makes it useful for qualitative researches. Researchers tend to take up interviews as a means of collecting data, due to its flexibility as it can be designed to address the state of a particular system, and there is an increased response rate from participants (Gray, 2009).

In addition, Saunders *et al.* (2009) added that rather than employing the use of either the structured or unstructured interview, the semi-structured uses an approach from both of them. Semi-structured was used to contact officials of m-money service to further investigate the area under discussion, understand their opinion, what they have done to bring about good quality service, also probing issues ,challenges they currently face and their future projections. The interview was done using face-to-face approach; notes were taken to ensure good explanation of the answers. However, open-ended questions were used, together with an interview guide to make certain that the study focuses on the necessary issues while being able to investigate unexpected responses (Bryman and Bell, 2007).

4.12Method of Data Analysis and Presentation

Data analysis is a very important aspect of a research and Porter (2008) portrays it as a process, started even before the collection of data ends. Saunders *et al.* (2009) also argued that data analysis has to do with "gathering, summing, and collating" the collected data, with the results reflecting important aspects relating to the topic under study.

The study is carried out using a combination of data collection instruments and the analysis is both qualitative and quantitative. With the qualitative data, cross case synthesis was used to analyze the data followed by Statistical Package for Social Sciences (SPSS)for the quantitative data which was used to code the data that was gathered from the field and hierarchical regression model for the analysis. Demographic data is examined using descriptive statistics.

4.13 Reliability & Validity

Reliability can be conceived as the assessment of the degree of consistency between multiple measurements of a construct (Hair et al., 2006). Reliability in essence is referred to

as a measure of the stability of the proposed measure(s) to be used for a given research (Ghauri & Gronhaug, 2005). As such the reliability is concern with the extent to which studies can be replicated (Johnson et al., 2007). While in quantitative studies the reliability of a measurement can be tested by statistical instruments (Tashakkori & Teddlie, 1998), the same cannot be said for qualitative research. Reliability in qualitative studies tends to be subjective especially given that human intervention is largely involved in the whole process. In order to bring some objectivity to the reliability of qualitative studies scholars like Seale, (1999) have advocated for alternative ways to ensure reliability. Moreover, for the qualitative study the strength of reliability is not in achieving exactly the same results but rather in the consistent similarity in the results (Collingridge & Gantt, 2008). Therefore in order to improve the quality of data the following activities were undertaking by the researcher to enhance the reliability of the qualitative study.

The "Low-inference descriptors" involving the recording of observations as concrete as possible (Seale, 1999), is used to enhance the reliability of the qualitative study The advantage in this is that it provides the opportunity of an unbiased record of the conversation (Easterby Smith et al., 2008), and thus enhances the reliability of the qualitative study. The researcher checked the accuracy of the data by sending the transcripts of the interviews back to the participants for their respective feedbacks. McKinnon (1988) argues that asking probing questions is a powerful technique to reduce threats to reliability in terms of allowing the research to accommodate some of the problems caused by the complexities and limitations of the human mind. Therefore in the data collection process different types of questions such as the main questions, follow-up question and probing questions were used to ensure consistency of answers from interviewees.

In the quantitative research however, there exist several approaches for assessing reliability which includes test-retest, alternative-forms and internal consistency reliability (Malholtra, 2007). However the ones most commonly used in assessing reliability is internal consistency (Hair et al., 2006). The simplest form of measuring internal consistency of a scale according to Malholtra, (2007) is the split-half reliability, with coefficient alpha or Cronbachs alpha as the widely used method of measurement reliability (Hair et al., 2006; Malholtra, 2007).

Consequently, Ghauri and Gronhaug, (2005) posits that the Cronbach's alpha can be conceived as a measure of the intercorrelations between the various items used to capture the construct. Therefore the expectation is that the various scale items should correlate positively but should not correlate perfectly as perfect correlation among items defeats the assumption that no single item is a perfect measure of a concept that is represented by a construct (Hair et al., 2006). Cronbach's alpha values fall between 0 and 1, however the generally accepted lower limit is 0.7.

Nevertheless, this might decrease to 0.6 in exploratory research (Hair et al., 2006). Cronbach's alpha however is capable of understating reliability in certain cases (Hair et al., 2006). Even further, it can also increase with increasing number of items; thus making it an imperfect indicator of the reliability of a scale (Hair et al., 2006). Other measures of reliability such as composite reliability generated using confirmatory factor analysis can be employed as additional measures of reliability in quantitative studies (Hair et al., 2006). This study therefore employed both Cronbach's alpha and composite reliability as indicators of the internal consistency of the measurement scales for the quantitative side of the research.

Validity is use to check the quality of the data and the results (Creswell & Plano Clark, 2007). Hair et al (2006) defines validity as the degree to which a measure accurately represents what it is supposed to measure. It is the also the extent to which instruments truly measure the constructs that they are intended to measure (Creswell & Plano Clark, 2007).

Like reliability, validity is perceived as a concept that is vague in qualitative research

(Dellinger & Leech, 2007; Onwuegbuzie & Johnson, 2006). Indeed scholars including Modell, (2005); Yin, (2003) posit that due to the vagueness of the concept in qualitative research, one is better off using the same criteria as that in quantitative studies to develop validity. In general two types of validity can be identified -internal and external validity. Internal validity refers to the extent to which the findings of a particular study can be generalized across an identified population, context, and time (Dellinger & Leech, 2007; Modell, 2005).External validity on the other hand, is conceived as the degree to which the researcher is confident about the conclusion/inferences of the causal relationship between variables/events (Tashakkori & Teddlie, 1998).

4.14 Ethical Consideration

The research takes into account some ethical considerations. Permission from authorities, right to confidentiality and the respect for human rights is considered. For the purpose of confidentiality, information is collected anonymously and participants assured that only the researcher will have access to their responses. In terms of human rights, participation is voluntary and participants are not coerced since the researcher is obliged to respect the dignity and worth of individuals including their right to hold their own attitudes and beliefs.

CHAPTER FIVE

DATA ANALYSIS AND DISCUSSION OF FINDINGS

5.1 Introduction

The collected data from the survey is presented in this chapter and used for the analysis. A number of variables were cross tabulated to link relationships in respondent's views and to also show its importance to the research's objectives. The outline for this chapter is as follows; a brief overview of the mobile operators, presentation of the qualitative data, descriptive analysis to characterize the collected data, reliability and validity check for the measurement model and multiple regression analysis and Anova derived from the regression to test the hypotheses.

5.2 Overview of Mobile Money Operators in Ghana

MTN Ghana

Launched in 1994, the MTN Group is a leading emerging market operator, connecting subscribers in 22 countries in Africa, Asia and the Middle East. In Ghana alone, the National Communications Authority precisely reported 13,852,398 MTN subscribers along with 45.23% market share that makes the MTN the leading telecommunication company in customer base (NCA, 2015). Scancom Ghana Ltd started operating in October 1996 using GSM 900 technology as Spacefone, with 15 sites and equipment from Ericsson (MTN Ghana, 2012). Spacefone operated as Areeba and in 2006 it was taken over by Mobile Telecommunication Network Group (MTN) and now its name is MTN Ghana; it has expanded greatly its network coverage (MTN Ghana 2012).Some of its services include, MTN zone, MTN wireless office, MTN Go live, convenient chip replacement, messaging services, call management services and international roaming services(MTN Ghana2012).

In July 2009, MTN Ghana launched a mobile money cash management service called MTN Mobile Money. MTN Mobile Money is a collaborative effort between MTN Ghana, authorized merchants, and ten banks in Ghana: Ecobank, Fidelity Bank, GT Bank, CAL Bank, Stanbic Bank, Zenith Bank, UBA, Merchant Bank, Intercontinental (Access) Bank, and Agriculture Development Bank. In launching MTN Mobile Money, MTN Ghana hopes to be able to provide a convenient money service to their customers, facilitate money transfers for the Ghanaian market as well as gain a competitive advantage in the budding industry (MTN Ghana 2012).

Most of MTN Ghana's MTN Mobile Money services are mobile phone enabled. Some of the services offered under MTN Mobile Money are also available to non-mobile users, and can be used over other internet enabled devices other than the mobile phone, or facilitated at MTN Ghana Service Centers, Partner Bank Branches, or at Authorized Mobile Money Merchant locations throughout Ghana (MTN Ghana 2012).

Airtel Ghana

Airtel in Ghana is a subsidiary of the Indian telecommunications company Airtel that succeeded Zain's operations in Ghana since March, 2010 (http://africa.airtel.com). The company has established its presence in about 20 countries across Africa, South Asia and the Channel Islands. As one of the world's top mobile communication companies, it aims to connect communities across Africa by providing affordable, relevant and innovative mobile solutions. According to NCA (2015) reports, Airtel in Ghana has a subscriber base of 3,735,656.

Tigo Ghana

Millicom International Cellular is a leading international developer and operator of cellular telephone services under the Tigo brand (www.tigo.com.gh). Primarily, Tigo operates in emerging markets across Latin America and Africa. The company's services are available to more than 30 million subscribers in 13 emerging markets in these continents. The company started its operations in Ghana in 1991 and was the first cellular network operator in Ghana under the Mobitel brand name which was replaced with Tigo in 2006. Today, Tigo operates in all 10 regions of Ghana with 4,133,760 subscribers (NCA, 2015).

5.3 Analysis and Discussion of Qualitative data: Interview Results

This section presents findings from the interview conducted with individual officials of mobile money providers. It focuses on describing the different types of m-money service being offered, how the service has been promoted to encourage customers' usage, identifying their views such as banks as competitors, concerns of consumers about m-money, what they consider important to customers about their use of the service, problems they face in successfully implementing the service.

5.3.1 Participants Description

In order to understand the views of the respondents in the interview, it's important for the researcher to provide a description of each respondent in terms of their working experience, educational level, the name of organization and position held. These descriptions will provide the interviewer a personal context with the interviewees.

5.3.2 Interview analysis and discussion

It was imperative to interview the mobile network operators to get in depth understanding about the mobile money operations. The individual cases werebe analysed using cross case synthesis, which rely strongly on argumentative interpretation, not numeric tallies. The researcher can probe the similarities and differences between the cases to develop naturalistic generalization (Yin, 2003). The interview guide was structured into various section outlining the reasons for introducing mobile money transfer, the different types of services it offers, its benefits to the operators and the customers, challenges and concerns faced and future directions. The Table 5.1 below summarises the responses of participants on the various themes.

The questions were represented by Q (Q1 to Q8), while M1 to M3 indicates the 'mobile service providers'. M1 represents MTN Ghana (MTN mobile money), MII represents Millicom (Tigo cash) and MIII represents Airtel Ghana (Airtel Money). Ghauri and Gronhaug (2005) posit that although interviews are known to be very useful in collecting data, it is necessary for interviewers to also have a significant knowledge of the respondent's values and expectations to be well executed. More so, eight questions were prepared by the interviewer, in reference to the discussions from the literature review and the responses to the interview questions were reassessed and categorized as shown below.

Table 5.1 Cross case synthesis of interview conducted (MI, MII, MII)

Time period	M1 2009-2015	MII 2011-2015	MIII 2010-2015
Reasons for introducing MMT	Solve customer issues Bank unavailability Create cashless economy	Solve customer issues Bank unavailability Create cashless economy	Solve customer issues Bank unavailability Create cashless economy
Types of mobile money services	Money transfer Bill payment General payment Point of sale Top up airtime	Money transfer Bill payment Point of sale Top up airtime	Bill payment General payment Top up airtime Money transfer
Customer concerns	Trust issues Security Privacy Cost	Reliability Privacy Trust	Trust Security Privacy Cost Risk
Implementation challenges	Merchant/customer ration	Merchant/customer ratio	Attitude of customers
Importance to operators	Bank reputation Cost effectiveness Competition Market expansion Reputation Cheaper platform	Bank reputation Cost effectiveness Competition Market expansion	Bank reputation Cost effectiveness Competition Market expansion
Benefits to customer	Convenience Less expensive (cost) Risk free Mobility Easy	Mobility Less expensive Easy	Quick Easy Convenience Less expensive
Issues of trust	Newness of service	Security	Reliability Security
Future plans	Anticipating a cashless economy	Anticipating a cashless economy	Presence in Africa

Source: Author's compilation

Reasons for the introduction of MMT

The interviewer started with this question, the reason for setting up the mobile money

transfer service to establish whether this was in line with literature and also to find out from

consumers if this complements their reasons as well.

According to M1 their reasons is to solve customers' problems for profit so they identified that there was a huge gap in the Ghanaian economy when it comes to sending and receiving money.

MI stated that ''…*People were going to bus terminals to give money to drivers who travel for about 4 to 5 hours and there were cases where accidents occurred, you are likely to loose the money so we identified that need and secondly, banks were not everywhere''*.

This is similar to the responses of MII who said that;

"...the benefit that the service offers to the public, making customers to stay for a longer period of time what I call stickiness and secondly, to make life easier by not transferring bulk money around"

MIII also stated the responses given by MI and MII. In response to this question, MIII stated that:

   "…we found a gap in the financial sector in providing services to the people who were unbanked and comparing the number of banks, they were not everywhere in serving them but they unbanked has access to mobile phones, thus we identified the need".

From the three responses to this question, it can be generalized that the reasons for the emergence of mobile money transfers was the unavailability of banks everywhere ,to stop the transfer of bulk cask and to provide financial services to the unbanked. This confirms with the work of (Jack and Suri,2011)

Types of services

This was a general question, which was recognized during the process of analysis, since almost all mobile service providers, provided closely interrelated services. M1 stated that

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they offer a variety of products and services to suit consumer's every day needs such as, airtime top-up, payment for goods and services, cash withdrawals and transfers and bill payments and point of sale. Further to this MI stated that;

"...currently we have University of Ghana, UDS, and countless schools in Western Region like Adisadel, Mfantepim and Mfanteman all of them can pay their school fees through mobile money platform''.

Similarly MII uses it for general payment, airtime usage, remittances and point of sale .Further response to this question, MII stated that;

'' *…there is the merchant transactions (using your e-value at merchant shop in payment for your shopping at for instance KFC and Marx Mart, they have point of sale systems, so they receive payment and print out receipts.''*

MIII also mention the same usage as the others, using it for general payment, buying airtime, money transfer and bill payment. From the above responses, all the three service providers use the mobile money transfer for the same purposes. Transferring money, buying airtime, bill payment and point of sale.

Customers concerns

The third question (Q3) addresses *'the known fears and concerns of customers about mobile money'?* Research by (Carlos and Miguel, 2009; Ayo et al, 2010) has shown that, the major worry of customers about mobile commerce applications are issues related to trust in terms of security and privacy, and is justified to have an impact on customer's perception of a service and therefore their intention to use the service. The interviewer acknowledged that both M1 and M1I made reference to 'security concerns'. They further categorised these

concerns into fraud, privacy concerns, reliability of service, trust (for financial organizations, MNOs and retailers) and perception about incurring hidden charges.

In addition M1 also said that:

"…o*thers were not just ready to embrace the change because you feel good holding physical cash so instead of going to pay through your phone I still need to feel I have money so that resistance was there*''.

Similarly, MI1 mentioned that:

"*…the major challenge is the behavior and reluctance of customers to change the traditional way of doing things. Customers still want to handle physical cash*''

MIII confirmed to the responses of the other two stating that:

"… t*he main barriers is not with Tigo Cash but Mobile money in Ghana as in the attitude of Ghanaians in fully accepting the services as compare to other countries like Kenya and Tanzania where mobile money is used in their everyday transactions*''.

Consumer resistance to product uptake has been known to occur when adoption and use of the product require significant alterations in the consumers' value systems, as well as their "established behavioural patterns, norms, habits and traditions"(Kleijnen, Lee, &Wetzels, 2009). This summarises the fact that customers of mobile money transfer are finding it difficult to adopt as a result of the old ways of handling money, physical cash.

Measures in addressing customers worries

In terms of the challenges being faced by the operators, solutions raised in terms of customers' worries are that M1 spoke about the necessity to educate customers on security measures they should observe, to ensure safety of their device. He stated that customers should be made aware of the importance of passwords which should be kept confidential

and also ensure mobile phones have pass-codes in case of theft. MI Similarly Ezeoha (2006) posits in his research that, security issues with transactions, does not solely depend on the operators, but is also the responsibility of consumers to ensure they take necessary security measures as well. MI further stated that:

"*…but our platform is based on the banking standards so in terms of security you can be assured. We use a platform owned and managed by Visa it's called Fandamos so Visa worldwide is known for its security so people are just skeptical they can't just understand how their money can be kept on the phone''.*

MI1 also added that:

"*…the operators ensures customer's get text message confirmation, for every transaction they perform with the service and so that they can keep track of their transaction*".

The mobile operators have put in place measures to ensuring that the use of the service is save. These measures are similar across board with the exception of MII who did not mention any measure.

Implementation challenges

The question investigates *'challenges being faced in successfully implementing mobile money'?* It was noted by the interviewer that M1 found this question an important area of interest. MI said that:

"*…the merchants issue – because you need subscribers we needed to strike a balance, merchants will tell you that the business is not profitable and how many people will use it, why should I invest money and the customer too will say if I register how will I get them because there are no merchants and merchants too will say there are no customers".* MII was in view of this as well However M1II stated that, the key challenges they are facing in implementing m-money is the behaviour of customers to accept the fact that cash is transferred electronically. MI and MII shared the same view as in the issue of

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merchant/customer ratio but MIII stated the behavioural patterns of customers being their main implementation challenge.

Mobile money and organisational improvement

This question was to 'identify *how mobile money has improved the organizations' productivity'*. In order for the reader to have a good understanding about the answers provided, it was imperative to simplify the analysis of the respondents to developing themes (Bell, 2005).This question had similar answers from both MI,M1I and MIII , which include bank reputation (brand image), cost effectiveness, competition and market expansion.

M1 opined *that mobile money has helped build the bank's reputation, since MTN was the first to implement the service in Ghana which improved the image partner banks had formed for itself over the years so there is nothing like direct competition with banks.* He also stated that the new innovation affected the view of individuals generally, because the bank portrayed an image as leaders in technological implementation. M1I mentioned that:

 "...*m-money has helped their bank save cost in terms of their operation, by reducing the cost associated with setting up branches and recruiting staffs, which has helped the bank strategise and also put more consideration to providing high quality services through m-money, and was found to be a cheaper platform for the bank"*.

 In addition M1II also proudly stated that:

"…*since the service is not been delivered by all telecommunication operators yet, it would help enhance the organisations image, giving them a competitive edge among competitors and also increased output",* which is in direct support of views provided in the literature by (Limsombunchai & Weng, 2006; Flavian *et al.,* 2004).

 M1 placed a lot of emphasis on cost effectiveness, and stated that, it is a known belief that banks and non-banking organisations have their major aim targeted at 'maximising profit'.

He stated that despite the fact that m-money is still innovatively new, the company's profit has maximised and they have created job opportunities, by recruiting agents to help deliver the service. M1 also added that as Ghana is moving towards a cashless economy-money would be a good way to reduce the queues in banking halls. This will also create room for customers to make use of the service and since his organization delivers high quality service to their customer's, this will lower the advertising and promotion cost since customers would spread the news more through the word of mouth.

Importance to customers

With respect to this question, M1, M1I and MIII gave similar answers to the fact that every customer wants the ability to conveniently, easily and risk free to make payments. Both respondents gave similar answers as to what they thought was of utmost importance to customers to be, usefulness, security of payment transactions, trust, convenience ,mobility and perceived cost. Security of every transaction made by consumers, privacy of their personal and sensitive data and information, trusting financial institutions, retailers and MNOs for a quality, reliable and effective service, and the ability to carry out transactions at any place and at any time without any restrictions is of utmost importance.

Issues of trust

MI added that a major challenge is that, m-money platforms and innovations are still quite new and lack of experience on the part of the consumer as well as rapid changes in the ICT sector are resulting in vulnerabilities which need to be urgently addressed. Nevertheless, M1I on the other hand added that in terms of security, customers have a certain level of perceived security risk about m-money and banks in general and it is necessary for the operators to create trust in order to retain a positive operator customer relationship as the literature posits that trust as a significant determinant influencing consumers intention

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towards adoption (Tobbin 2010). In order to meet their customer's expectations, the banks limited transactional values by putting a fixed amount of transaction that can be done in a day and a maximum number of transactions in a given period of time.

Future Plans

This *'investigates what future plans they have for the service with regards to improving and expanding the service.* M1 stated their aim to reach everyone, as this would enable them introduce more effective products to the already existing products. They also planned to spread the service to every corner in Ghana, which would also increase their agent base and also provide job opportunities for a number of unemployed masses, as they can act as agent in different zones in the regions. In addition M1I added that their plan for the future is to see mobile money transfer as an everyday business where their presence would be felt everywhere. MIII plans to have its presence felt in the whole of Africa

5.4 Analysis and Interpretation of Quantitative data

The first section describes the demographic data of respondents, the second section focuses on the analysis of respondents to the questions. Microsoft excel package and SPSS version 19 was used for the analysis, and due to the aim of the research it was found essential to carry out specific statistical tests in order to give the researcher the chance to check relationships between variables where necessary and identify possible significances.

5.4.1 Demographic and Descriptive Analysis

A total number of 320 respondents were used in the analysis out of 340 questionnaires distributed. 20 were discarded as a result of lots of missing values. The demographic profiles of the respondents are shown in Table 5.2 below. The sample was made up of 182 male and 138 females representing 56.9% male and 43.1% .89.1% of the respondents were

below 50 years of age and a mean age of 25 years. It is fair to say that the ratio of men to women in this study is not biased and therefore does not affect the responses in any significant way. This could be justified by the fact that the database obtained from the respondents indicated that there were more male users of the service as compared to females

With regard to education, the majority were at least university graduates or equivalent (about 51.3% including the postgraduates (Masters). With regard to employment, those employed comprise the majority at 37.5% and 9.4% of students were employed. To make it simpler for the respondent, the local currency was used for some of the respondent .At the time of the study, $1 was exchanged for 4 Ghana Cedis, approximately. Thus, about 38.8% of the respondents earn more than $300 per month. According to annual income and educational levels, the majority of the respondents appear to belong to the lower middle class of the Ghanaian Society. The respondents were largely mobile phone users (100%) belonging to more than one network provider. The respondent uses a combination of MTN and one of the five network providers currently operating in Ghana. However, respondents that use MTN only accounted for 60% of the sample. This confirms MTN as the largest Mobile Network Provider in Ghana based on this sample.

With regard to the various uses of mobile phone, 99.7% of respondents use their mobile phone for receiving and making calls. Only 29.4% use their phones for downloading ring tones. Other uses identified include internet (60%) and SMS (36.2%). Apart from the traditional usage of the phone, the respondents report using phone for some value added services. The most popular form of money transfer identified was through agents transfer with 76% reporting to have used the agent for money transfer. Regarding knowledge of any mobile money transfer (MMT) in Ghana, 100% of the respondents said yes and answered to

have heard of the Mobile Money Transfer. However, an average of 30% claimed to have used the service since last month. Knowledge of the service was not reflective of its usage.

Table 5.2. Demographic Variables of Respondents

variable	Frequency	Percent
Gender		
Females	138	43.1
Males	182	56.9
Age		
Less than 18	2	0.6
18-25	140	43.8
26-30	60	18.8
32-40	47	14.7
41-50	36	11.2
Over 50	35	10.9
Educational Level		
No education	3	0.9
Primary	2	0.6
J.H.S	4	1.2
High school	94	29.4
Deploma/Certificate	53	16.6
Bachelor Degree	120	37.5
Masters	44	13.8
Employment status		
No employment	26	8.1
Employed	120	37.5
Self-employed	69	21.6
Student and employed	30	9.4
Student	75	23.4
Income		
Below 500	108	33.8
500-1000	78	24.4
1001-1500	124	38.8
1501-2000	9	2.8
Above 2000	1	3

Source: Field data (2015)

Table 5.3 Descriptive Statistics of scale item

Variables	N	Mean	Std Dev	Std Error
I find mobile money a useful way of making payment	320	4.08	0.87	0.05
Mobile money helps save time	320	4.65	0.48	0.03
MM makes it easier to conduct transactions	320	4.28	0.92	0.05
Advantages of mobile money would outweigh the disadvantages	320	3.85	0.81	0.05
Mobile money helps me to accomplish my task quickly	320	4.50	0.57	0.03
I receive exact money when it is sent to me	320	3.65	0.99	0.06
MM keeps proper records of all transactions with the service providers	320	3.50	1.08	0.06
If I lose my mobile phone, I will not lose my money as well	320	3.46	1.10	0.06
If there is a network problem, my transactions will be affected	320	3.48	1.59	0.09
It is difficult for my money to be stolen if using mobile money service	320	4.07	0.52	0.03
My friends are on a mobile service	320	4.31	0.46	0.03
My family are on mobile money service	320	3.96	0.63	0.04
Most social transactions I do are conducted on mobile money	320	3.79	0.88	0.05
Mobile money is cheaper compared to other financial services	320	3.95	0.66	0.04
Mobile money is easy to use compared with other financial service	320	3.99	0.63	0.04
Mobile money is easy to access	320	4.04	0.64	0.04
I intend to continue to use mobile money	320	4.19	0.65	0.04
I intend to use mobile money more frequently for transfers	320	3.35	1.06	0.06
I intend to use MM for most financial purposes	320	3.86	0.75	0.04
I enjoy making purchases with my mobile phone	320	3.53	1.08	0.06
I intend recommending MM service to others	320	3.95	0.78	0.04
Sending SMS to recipients is easy	320	4.16	0.44	0.02
The registration procedures are easy for me	320	3.75	2.37	0.13
The interface with mobile money is user friendly	320	3.18	0.99	0.56
It is easy for me become skilful at using MM	320	3.36	0.86	0.04
MM process is easy to remember	320	3.56	1.20	0.07
Using MM for my transaction is not expensive	320	4.08	0.87	0.05
MM helps me save time and transactional cost	320	4.09	0.48	0.03
MM registration is free of charge	320	3.24	0.36	0.05
Affordable cost of replacement of Sim card	320	3.45	0.74	0.08

Source: Field data (2015)

5.4.3 Exploratory Factor Analysis

In order to extract the factors that account for adoption of mobile money, the Bartlett test of

Sphericity (Approx.: Chi-square=12428.6, df. 210,sig. 0.000) and the KMO measure of

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sampling adequacy (Value of 0.50) confirmed that there was significant correlation among the variables to warrant the application of exploratory factor analysis. The table below displays the results of the KMO test which was ran for the data obtained from the respondents. The KMO overall statistic of 0.50 for the variables used in the study gives an indication that there is a higher possibility that there exists an inter-correlation between the variables thereby making them sensible for analysis. Only variables whose eigen values > 1 were selected.

Table 5.4 - KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		0.50
Bartlett's Test of Sphericity	Approx. Chi-Square	12428.6
	df	210
	Sig.	.000

Source: Field data (2015)

The variable loadings for exploratory factor analysis are considered ―high if they are all .8 or greater (Velicer and Fava, 1998) – but this is unlikely to occur in real data. Hair et al, (2010) posit that ideally variables should have loadings greater than 0.5 to be retained for analysis. However more common magnitudes in the social sciences are low to moderate variable loadings of above .40. If an item has a loading of less than .40, it may either not be related to the other items, or may suggest an additional factor that should be explored. Costello and Osborne (2005) assert that the researcher may consider why that item was included in the data and decide whether to drop it or add similar items for future research. However it is worthy to note that these numbers are essentially correlation coefficients, and therefore the magnitude of the loadings can be understood similarly. The loadings used in the analysis table are all high, which indicates that the extracted components represent the variables well. A compilation of the various alpha values is presented in Table 5.5 below.

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Overall, the variables measuring the individual factors were found to explain altogether a satisfactory 86.1% of the total variance

Table 5.5 – Reliability of scales – independent variables

Variables	Loadings	Cronbach's alpha
Perceived Usefulness		0.74
I find mobile money a useful way of making payment	0.87	
Mobile money helps save time	0.62	
Mobile money makes it easier to conduct transaction	0.94	
I believe the advantages of mobile money would outweigh the disadvantages	0.71	
Mobile money helps me accomplish task quickly	0.76	
Perceived Trust		0.67
I receive exact money when it is sent to me	0.62	
Mobile money keeps proper records of all transactions with the service providers	0.77	
Perceived Risk		0.63
If I lose my mobile phone, I will not lose my money as well	0.63	
If there is a network problem, my transactions will be affected	0.66	
It is difficult for my money to be stolen if using mobile money service	0.87	
Social Influence		0.66
My friends are on a mobile money service	0.72	
My family are on mobile money service	0.71	
Most social transactions I do are conducted on mobile money	0.66	
Competitive Intensity		0.92
Mobile money is cheaper compared to other financial services	0.82	
Mobile money is easy to use compared with the other financial services	0.83	
Mobile money is easy to access	0.91	
Perceived ease of use		0.51
Sending SMS to recipients is easy	0.92	
The registration procedures are easy for me	0.34	
The interface with mobile money is user friendly	0.81	
It is easy for me to become skillful at using MM	0.88	
MM process is easy to remember	0.86	
Transactional cost		0.13
Using MM for my transaction is not expensive	0.78	
MM helps me save time and transactional cost	0.79	
MM registration is free of charge	0.83	
Affordable cost of replacement of Sim card	0.72	

Source: Field data (2015)

Per the Cronbach's alpha coefficient results shown in Table 5.5 above, it is clear that all the scales for the independent variables exceeded the conventional acceptable 0.6, and thus proved to be reliable for multiple regression analysis but perceived ease of use (0.51) and transactional cost (0.13) were below the acceptable level, thus excluded from further analysis as Hair et al (2010) posits that ideally, factors should have an alpha value of 0.6 or better.

5.4.4 Reliability of the dependent variable

The reliability of the scales used for the dependent variables was also assessed and found to be reliable. All the variables have high loadings and loaded perfectly on the dependent variable with a very excellent Cronbach's alpha of 0.80. This is an indication that the statements used for the dependent variable form a complete structure in describing behavioral intention.

Table 5.6 – Reliability of scales for dependent variable

Variables	Loadings	Cronbach's alpha
Behavioural Intention0.80 I intend to continue to use mobile money		0.67
I intend to use mobile money more frequently for transfers	0.79	
I enjoy making purchases with my mobile phone	0. 88	
I intend to use mobile money for most financial purposes	0.56	
I intend recommending MM services to others	0.91	

Source: Field data (2015)

5.5 Multiple Regression Analysis

A multiple regression was used to analyze the relationship between behavioral intention and its drivers. This was done to extract the independent variables that can better explain the dependent variable. Behavioral intention was used as the dependent variable whilst the independent variables were represented by perceived usefulness, perceived trust, perceived risk,competitive intensity and social influence. The Table 5.7 below presents a summary of the multiple regression least squares results for the dependent and independent variables.

Tab 5.7: Model 1 – Hierarchical   regression analysis for drivers of consumer behavioral intention

Variable	Beta	S.E.	t value	p value
(Constant)		.567	1.001	.318
Perceived Usefulness	-.317	.061	-6.526	.000
Perceived Trust	.409	.047	6.411	.000
Perceived Risk	-.182	.040	-3.389	.001
Social Influence	.489	.090	6.803	.000
Competitive Intensity	.430	.065	7.255	.000
S.E. of estimate R-Square	0.536	F-statistic	32.463	
Adj. R-Square	0.341	Sig. F-change	0.000	
	0.330	R-Square change	-	

Dependent variable: Intention

Model 2

Variable (Constant)	Beta	S.E.	t value 1.776	p value
Perceived Usefulness		.580	-6.877	.077
Perceived Trust	-.331	.060	6.539	.000
Perceived Risk	.412	.046	-2.251	.000
Social Influence	-.126	.042	4.423	.025
Competitive Intensity	.363	.103	6.498	.000
Age	.389	.065	3.037	.000
S.E. of estimate	.173	.026 F-statistic	30.311	.003
R-Square	0.511	Sig. F-change	0.000	
Adj. R-Square	0.405	R-Square change	0.045	
	0.391			

Dependent variable: Intention

Model 3

Variable	Beta	S.E.	t value	p value
(Constant)		.611	-.259	.795
Perceived Usefulness	-.356	.059	-7.617	.000
Perceived Trust	.553	.049	8.206	.000
Perceived Risk	.044	.048	.680	.497
Social Influence	.480	.104	5.793	.000
Competitive Intensity	.435	.064	7.416	.000
Age	.306	.028	4.984	.000
Income	-.330	.048	-4.864	.000
S.E. of estimate	0.529	F-statistic	29.299	
R-Square	0.360	Sig. F-change	0.003	
Adj. R-Square	0.347	R-Square change	0.019	

Model 1

A multiple regression analysis was conducted to tease out the relationship between the independent variables, MMA factors (perceived usefulness, perceived trust, perceived risk, social influence, competitive intensity) and the dependent variable (Behavioural Intention). Table 5.7 above illustrates a multiple regression results of the influence that Perceived Usefulness, Perceived Trust, Perceived Risk, Social Influence and Competitive intensity have on Behavioural Intention. The results from Table 5.7 above revealed that Perceived Usefulness (β = -0.317, p<0.05) ,Perceived Trust (β = 0.409, p<0.05), Perceived Risk (β= -.182, p<0.05),Social Influence (β= 0.489,p<0.05) and Competitive intensity (β=.430, p<0.05) had a significantly positive prediction on Behavioural Intention with Perceived Usefulness, Perceived Trust, Perceived risk, Social Influence, Competitive Intensity explaining 31% ,40% ,18%,49% and 43% of the variation in behavioural intention across the sample respectively. Hence, hypothesis 1,hypothesis 2,hypothesis 3,hypothesis 4 and hypothesis 5 stating that 'perceived usefulness has a significant relationship with behavioural intention' ,'perceived trust has a significant relationship with behavioural intention', perceived risk has a negative influence on behavioural intention to use mobile money , Social influence has a significant relationship with behavioural intention, competitive intensity has a significant relationship with mobile money respectively were statistically significant. Again, from Table 5.7 Perceived Risk had a beta coefficient of -.182 and perceived usefulness had a beta coefficient of -.317 showing an inverse relationship with Behavioural Intentions.

Model 2

Baron and Kenny (1986) indicated that a control variable is a third variable which has the tendency of changing the direction of a bivariate relationship. To test this, a two-step hierarchical regression analysis was used. In testing for the control effect of Demographics

on behavioural intention, first, the predictor variables, perceived usefulness, perceived trust, perceived risk, social influence and competitive intensity were entered into the model. At the second level of entry, (that is the hierarchical regression model) the control variable Age, was entered into the model as a controlled variable. The results from the hierarchical regression analysis shown in Table 5.8 above revealed that the beta coefficient of perceived usefulness, perceived trust perceived risk, social influence and competitive intensity were -.331, 0.412, 0.126 , .363 and .389   respectively. Again before the introduction of the moderating variable, there is 34% of the variation in Behavioural Intention is explained by the independent variables – Mobile Money Adoption (MMA) factors. Age then explained only 6% of the variation in the dependent variable, that is, behavioural intention after the control has been introduced. Finally the interaction had a beta coefficient of 0.173and explains a significant increment variance in behavioural intention   ($\Delta R^{2 =} 0.391$). After the introduction of the control, that is Age, the control effect was significant in explaining the relationship between MMA factors and behavioural intention. Hence, demographic variable *"Age will influence the relationship between the MMA factors and behavioural intention"* was retained.

Model 3

The control effect of Income on behavioural intention was also tested using a two-step hierarchical regression analysis. The results in Table 5.9 above show the beta coefficient of perceived usefulness, perceived trust and perceived risk, social influence and competitive intensity were -0.356, 0.553, 0.044, 0.480, and 0.435 respectively. Again, the interaction term had a beta coefficient of -.330 with a significant value of 0.000 which explains a significant increment variance in behavioural intention ($\Delta R^{2 =} 0.019$) but also showing an inverse relationship. This explains that, the presence of income will have an effect on

individual's behavioural intention to adopt to mobile money services. However, perceived risk *p* value (.497) exceeded the standard level of 0.05, thus became insignificant, meaning consumers earning income do not see risk as a factor in mobile money adoption.   (Hence demographic variable income will influence the relationship between MMA factors and behavioural intention, thus statistically supported.

5.6 Discussion of Results

This section focuses on discussing the results and evaluating the research hypotheses.

Summary of Hypothesis Tests. In this study, results pertaining to the relationship between five independent variables – perceived usefulness, perceived trust, perceived risk, social influence and competitive intensity – and the dependent variable behavioral intention indicated that not all the hypotheses stated were supported within the Ghanaian context. The summary Table 5.11 above revealed that whilst H1, H2,H3, H4, H5, were significantly supported and the control variables; age and income had a positive control effect whilst education and gender excluded. The table above is a summary of the hypothesis tests and the conclusions derived from the study.

Table 5.8 – Summary of Hypothesis Tests

Hypotheses	Hypothesized effect on behavioural intention	Findings	Conclusion
H1 (PU)	+	+	Accepted
H2 (PT)	+	+	Accepted
H3 (PR)	_	_	Accepted
H4 (SI)	+	+	Accepted
H5 (CI)	+	+	Accepted
H6 (PEOU)	+	Below alpha level	Excluded
H7 (TC)	_	Below alpha level	Excluded

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Findings from the research show that, customers' perceived usefulness has a positive significant effect on their intention to use mobile money in Ghana. It implies that a user's intention to use m-money will increase, if they find that particular system is useful. This is as a result of m-commerce characteristics, such as ubiquity and immediacy, where consumers will be able to retrieve information and also conduct transactions anywhere and at any time. In this research perceived usefulness was found to be significant which sustains prior researches that used UTAUT in the context of mobile commerce (e.g. Luarn and Lin, 2005; Lin and Wang, 2005; Lu *et al*, 2003; Ventakesh *et al*, 2003; Kim *et al*., 2010) and e-commerce (e.g. Guriting and Ndubisi, 2006). These studies show that perceived usefulness plays a significant role in influencing the intention to use a new technology. However this contradicts the study by Ramayah and Ignatius (2005), determined the influence of perceived usefulness, perceived ease of use and perceived enjoyment with intention to shop online, they found that perceive usefulness was not significantly associated with intention to shop online.

Nevertheless, mobile money providers and vendors should emphasize on implementing a reliable system that will meet users' expectations, as well as ensure they provide helpful and quality information to users.

Results from the analysis also shows that customers' trust in mobile network operators will influence their intention to use mobile money in Ghana. This research, however contradicts prior research by (Wei *et al*., 2009; Pousttchi & wiedemann, 2005), where their findings show that trust does not have a significant effect on intention to use mobile commerce applications in Malaysia, although their studies were conducted in a different environment other than Ghana but supported by (Heijden *et al*., 2003; Gefen *et al*., 2003.

In other words, distrust for mobile money operators can be said to be due to past experience with the banking system, including ATM and debit card issues, while distrust for mobile network operators is due to their unreliable network coverage.

Consequently, without trust users will not employ the use of the service, as they would deem it not useful and safe. This is understandable, as mobile money services involves monetary transactions and users are normally used to conducting transactions face to face. Nevertheless, Wang and Barnes (2007) posit that organisations can incorporate strategies to build customer trust e.g. company guarantee policy and statement (Wei *et al*., 2009). Furthermore, findings from the research also show that there is a significant relationship between trust and intention to adopt to mobile money services in Ghana. Where Pallant (2007) posits that a positive correlation indicates that as one variable increases, the other increases as well, this shows that, a customer's perceived trust of mobile money would increase their intention to adopt to the service in financial institutions, retailers and MNOs.

Based on the literature review, a higher perceived risk in MMT service will lead to a lower rate of intention to use. Furthermore, perceived risk was believed to be a predictor and barrier to Mobile money transfer services, and expected to negatively influence consumer's behavioral intent. This was supported by the study but at a very low significant level (β= -.182,$p<0.05$)). Thus, the hypothesis that perceived risk negatively influences mobile adoption is accepted.

The results indicated that the level of risk perceived to be inherent in the use of the mobile money is inversely related to the likelihood of consumers adopting that service. The findings support previous adoption research in the area of internet banking showing that perceived security risk is an important predictor of Internet banking adoption (Westland, 2001; Pavlou,

2002). For instance, Pavlou (2002) argues that perceived risk arises from the uncertainty customers face when they cannot foresee the consequences of their e-banking transactions. This result confirms the findings of Chung and Paynter (2002) that identified consumers' fears regarding transaction security as an inhibitor to the adoption of Internet banking.

Users of mobile money transfer in emerging markets like Ghana and Ghanaians in general are used to carry physical cash around and in conducting their transactions. The findings of the interviews before the survey reflected this. The issue of perceived risk factor in mobile money adoption arises because economic transactions involve risk, (Humphrey and Schmitz, 1998). This is particularly true in the case of mobile money, Clay and Strauss, (2000) said one of the customers" main concerns would be reliability of the network. When customers are transmitting personal financial data on the network, there are risks that unauthorized parties could intercept this information. Therefore, customers" technology orientation and perception of the technological competency of the electronic communication system is very important in the processing behaviour

Perceived risk can also cause customers to reject new technology-based service delivery. Perceived risk is related to reliability and system failure (Mols,1998; Walker, 2002). Customers in emerging economies like Ghana are also worried that technology-based service delivery systems will not work as expected, and lack confidence that problems can be solved quickly (Walker, 2002). Frequently, slow response time after the mobile interaction leads to a delay of service delivery and causes customers to be unsure that the transaction was completed (Jun &Cai, 2001).

As experienced in Ghana, mobile network problems by some of the networks have an impact on consumers intention to adopt to the service It is crucial for managers to understand the barriers to mobile adoption in order to assign resources effectively to obtain competitive advantages and increase efficiency in the mobile money system. Accepting the key role of perceived risk in mobile money adoption, finding an operational segmenting variable that could both reduce consumers risk perception and positively influence mobile money adoption, would be of great managerial interest (Aldas-Manzano et al., 2009)

Findings on Social Influence ($\beta= 0.489$, $p<0.05$)   shows that consumers can be influenced by relatives, friends, business partners they know after finding out the benefits they could derive from using the service. This research is consistent with the findings of Zhou et al (2010) and Riquelme and Rios (2010) that, social influence has a significant effect on consumer adoption of mobile banking. Therefore, the hypothesis is supported that social influence has a positive effects on consumer intention to adopt and use mobile money.

Competitive intensity ($\beta= .430$, $p < 0.05$) results provide insights on how competition affect behavioural intention to adopt to mobile money services. The result was statistically significant attesting to the hypothesized statement that competitive intensity will have an influence on behavioural intention .Mobile money service providers in Ghana encounter competition from other alternatives. This could make customers switch or affect their intention to adopt especially when agents face stock out issue and the cost associated with stock-outs are magnified in the face of competition. In the initial interview, M1 confirmed this when mention was made of the need for provision of super merchants who would control a number of agents to solving issues of stockout. As Anderson et al. (2006) showed was the case with mail-order catalogs, mobile money agents in Kenya and Uganda who

stock out more often experience lower steady-state demand, which could cause consumers to easily defect to other alternatives in the country which provide similar function. Agents will also want to account for lost steady-state demand as a consequence of stock-outs when deciding on their cash and e-float inventory levels. In the mobile money context, agents enjoy significant rewards for expertise as a main effect. Oliveras and Cachon (2009) termed this the sales effect

CHAPTER SIX

SUMMARY, CONCLUSIONS AND MANAGERIAL IMPLICATIONS

6.1 Introduction

The previous chapter presented the empirical tests and results found in the study – model evaluation, estimation of results and testing of hypotheses. This concluding chapter provides a summary of the research conclusions, implications and direction for future study. The chapter also highlights the critical lessons drawn from the study and makes some recommendations for stakeholders of the study.

6.2 Summary of the study

This study investigated into the adoption of mobile money in emerging markets. More specifically to identify factors that will make users of mobile money use the service frequently, specifically Ghana. Bhattacherjee et al., (2008) asserts that long-term viability of the service and its eventual success depends on its continued use rather than first-time use. Thus the study sought to find answers to the question ―what are the factors that affect the Ghanaian consumer of mobile money to adopt to the service.

In order to answer this question posed in chapter one, the study reviewed existing literature on mobile money, theories and user's behavioural studies. Culminating various theories in this area from previous studies (such as Koenig-Lewis et al., 2010; Venkatesh et al., 2003). Tobbin (2011 (Ivatury& Pickens, 2006; McKay & Pickens, 2010; Porteous, 2006) seven (7) factors were identified as mobile money factors leading to behavioural intention – perceived usefulness, perceived ease of use, perceived trust, perceived cost, social influence, perceived risk and competitive intensity and influenced by demographic factors; age, income, gender,

education. A conceptual model, shown above, was thus developed from the various theories leading to formulation of relevant hypotheses. This was done by adopting a mixed sequential method approach in which the heads of three mobile operators were interviewed. Three was chosen for the qualitative study because only three operators of mobile money transfer currently operate in Ghana followed by the administration of three hundred and twenty (320) valid questionnaires obtained from respondents out of the total of three hundred and forty (340) administered within a span of three weeks. The questionnaire was developed by the researcher based on the theoretical framework and objectives for the study. The respondents were selected using convenience from within the Accra metropolis that used the service at various mobile agents. The suitability of using the survey strategy in this study was to help the researcher identify and explain statistically, the factors that lead users to adopt to the mobile money service in Ghana.

The mobile money sector in Ghana has three main operators namely MTN mobile money, Airtel money and Tigo cash. In 2010, MTN was the only mobile money provider and in 2011, Tigo and Airtel came on board thereafter (www.bog.gov) .The study did not target any specific operator but any user who came to transfer money within the period of the research was chosen

 Furthermore, the data was analysed using cross case analysis for the qualitative research, finding out the similarities and differences of the participants' responses and descriptive statistics, exploratory factor analysis and hierarchical regression for the quantitative data. This was premised on the fact that quantitative data analysis techniques enable numerical representation and manipulation of observations/data for the purpose of describing and explaining the phenomenon which reflects the observations/data.   The analysis was performed using Statistical Package for Social Science (SPSS) version 18.0 as an instrument

which helped generate tabular and numerical results for the model. In all there were 56.9% male and 43.1% female who took part in the study representing.

6.3 Summary of model, dependent and independent variables

Initially, using multiple regression analysis, the research model was tested and proven to be statistically significant (F = 32.463, Prob.F-stats <0.05) and a respectable 34.1% explanation for the variance in behavioural intention. Notably, the independent variables in the conceptual model are perceived usefulness, perceived risk, perceived trust, social influence and competitive intensity whilst the dependent variable is behavioural intention.

Preliminary considerations made to test the internal consistencies of these scales for the study indicated that they were highly reliable for the analysis. This is because all the scales for both the independent variables and the dependent variable had Cronbach's alpha loadings which were more than 0.6 with the exception of transactional cost (0.13) and perceived ease of use (0.51) which fell below the conventional level ,thus excluded. However these two cannot be neglected when conducting future studies since previous studies indicated they were positively correlated. For instance, perceived ease of use (studies indication, by Venkatesh &Davis, 1996, 2000; Venkatesh& Morris, 2000 Pousttchi and Wiedemann, 2005; Carlsson et al, 2005) and transational cost (Luarn and Lin, 2004; Tobbin, 2012, 82; Dass& Pal, 2011).

Further multiple regression analysis indicates that these dependent and independent variables (i.e. the drivers) explain a reasonable variance in the behavioural intention to use mobile money in Ghana. All the five independent variables were found to statistically influence behavioural intention (perceived trust, perceived usefulness, perceived risk, competitive intensity and social influence). The dependent variable behavioural intention

was operationalized as their positive feelings and their intentions to adopt and continually use the service.

In the second model, demographic variable, age was introduced to control behavioural intention , the research model was tested and proven to be statistically significant (F = 30.311, Prob.F-stats <0.05) and a respectable 40.5% explanation for the variance in behavioural intention. This means that age has an influence on customers intention to adopt to mobile money services in Ghana.

Demographic variable, income was also introduced, using hierachical regression analysis, the research model was tested and proven to be statistically significant (F = 29.299, Prob.F-stats <0.05) and a respectable 36.0% explanation for the variance in behavioural intention. Customers intention to mobile money in Ghana is influenced by their income. The other demographic variables, education and gender were not accepted as control variables and as a result excluded.

Additionally, Anova analysis test was prepared to confirm the hypothesis developed and to ascertain the relationship between the independent variables and the dependent variable. The results revealed that all the independent variables were positively related to the dependent variable – behavioural intention. They showed positive relationships with correlations which were significant at both 0.01 and 0.05 levels (2-tailed). This helped to emphasize the usefulness of the developed model in the conducting of research related to the area under current study concerning consumer behavioural intention of mobile money.

6.4 Major Findings

Findings from the analysis performed from the study have been discussed in relation to the objectives of the study. Identify factors that influence customers in Ghana to adopt to mobile money service. This is the main objective of the study. As stated earlier in this chapter a review of existing literature on behavioural intention uncovered seven major factors (perceived risk, perceived usefulness, perceived ease of use, perceived trust, transactional cost, competitive intensity, social influence) that influences customers behavioural intention to adopt to the mobile money service in Ghana. However two were below the conventional level of 0.06 (transactional cost (0.13) and perceived ease of use (0.51)) were excluded. The remaining five variables were positive and significantly related to behavioural intention and controlled by demographic variables, age, and income.

All the respondents (100%) claimed to have heard about mobile money in Ghana (MTN, Tigo and Airtel). This is as a result of their huge advertisement campaign across the country. Despite these awareness, an average of 30% claimed to have used the service since last month as the knowledge of the service was not reflective of its usage. This findings is in line with the literature, Bank of Ghana statistics which posits that generally, active users of mobile money in Ghana as of 2014 is 2,369.997 (www.bog.gov). This has not enjoyed the viral spread of MPESA mobile money. Interview conducted with the service providers in relation to this also confirmed this point as they all want their presence and usage felt everywhere. Conceptual framework to identify the factors that make consumers adopt to the service was necessary as a result of this. Another interesting point to note is customers reluctance to accept the service as a result of the usual way of carrying physical cash around as confirmed in the interview. This can be linked to the issue of trust and risk being positively significant in the analysis and consistent with previous research. Consumers in

Ghana are used to old ways or traditional way of using money thus the need for providers to build trust to enable switching. Another significant finding, perceived usefulness which is consistent with previous research (Gu et al, 2009) that perceived usefulness has a positively significant relationship with behavioural intention.

Issues of network failure and how to track transaction during such periods are some of the risk and trust issues providers have to contend with. Extant research showed that trust can promote users' intention to use and reuse the service (Zhou, 2013).

Family settings in Ghana practice more of the extended family lifesyle than the nuclear family compared to the western world. This makes social influence highly significant in the adoption of mobile money transfer. Results of social influence above were positively significant. Wu et al.(2007) asserted that individual's behaviour is affected by social influence. In other words, people will use mobile money in some specific social situations in order to keep the interactions with others and enhance the statues in their social groups (Shin 2009).

Competitive intensity had a significant impact on consumer's intention to adopt to the service. Mobile money transfer faces competition with other financial transfer systems deployed at the banks such as the Agricultural development Bank's telegraphic transfer. For general usage to be experienced, operators must ensure quality, reliability and trust to enhance coverage.

6.5 Revisiting the Conceptual Framework

At the end of the literature review, the researcher proposed a research framework which indicated that mobile money adoption factors, perceived ease of use, perceived usefulness, perceived trust, perceived cost, competitive intensity, social influence, perceived risk positively relate to behavioral intention. Additionally, it went ahead to propose that demographic variables; gender, Income, education, age will influence behavioral intention. Nonetheless, a new conceptual framework was realized after the analysis of data obtained from the field and this is illustrated in Figure 5.2 below. The new model indicates that mobile money adoption factors; perceived usefulness, perceived trust, perceived risk, social influence, competitive intensity has a positive influence on behavioral intention and this relationship is influenced by demographic variables (age and income) . Thus, perceived ease of use and perceived cost which was first proposed to influence behavioral intention and demographic variables; gender and education no longer influence this relationships.

Figure 6.1: Post Study Framework
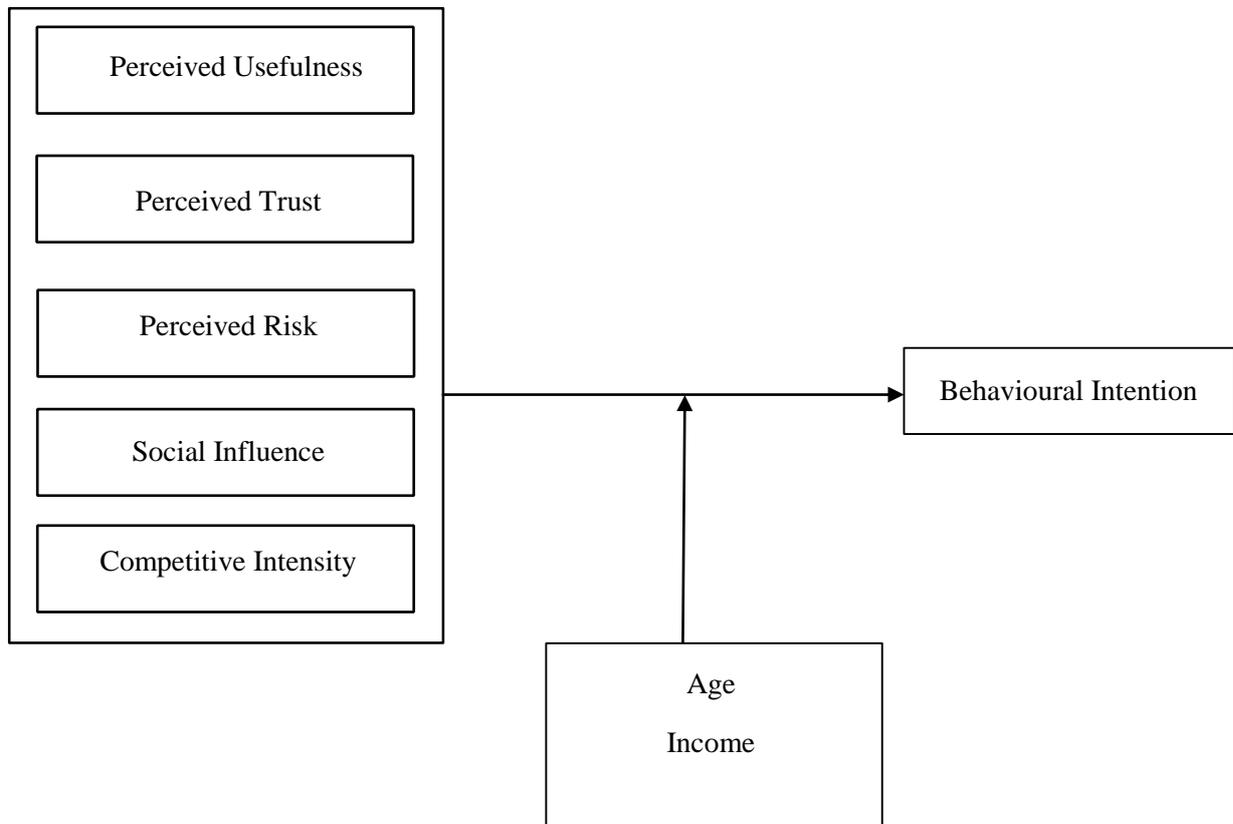
6.6 Managerial Implications

The results of this research have brought about a guide to a number of strategies, which can be employed for the different parties of interest for mobile money in Ghana. For financial institutions and mobile money providers, the need to recognize the factors that affect customers' intention to use mobile money should be put into consideration, so as to increase its use and encourage its general acceptance. This is due to the fact that the success and growth of the service lies in the hands of the consumers. In terms of consumers inability to switch as a result of old ways of carrying physical cash based on the initial interview and the survey showed that it is a significant factor. It is imperative for financial institutions to have a comprehensive security scheme that can be trusted and reduce the risk of using the service, so as to allow for secured transactions. In addition, making customers aware of the

importance of service in terms of its usefulness through various promotional tools and spelling out its competitive edge over the other alternatives, making references to its usage by friends and families are vital to influence customers' intention to use m-money.

6.7 Implications for theory and further research

The adoption factors of mobile money transfer in emerging economies, could influence the continued use of mobile money in Ghana has been the main subject of this study. Many countries adopting the mobile money service use the Kenya's M-pesa template, thus the results of this study may not be the same in other countries and may also differ based on sample sizes, and social class of respondents. Little research has been done on mobile money and research done in this area categorises mobile money into two categories; mobile payment and mobile banking. The current study in that regard has contributed to literature on consumer behavioural intention to use mobile money transfer in Ghana looking at some specific variables culminated from the unified theory of acceptance and use of technology which combines all the other theories. Few studies conducted in this field use single model like the technological acceptance model, the diffusion of innovation or a combination of them. This study can be applied in other context as well, manipulating other variables which may affect the model. As mobile money transfer is on the rise in emerging economies like Ghana, studies could be conducted other neighbouring countries like Nigeria to ascertain comparative analysis study as every country has its own unique template. Research conducted argued that the unique combination of various conditions enabled Safaricom to effectively deploy the M-PESA scheme. FinAccess (2006) and FinScope (2009).

This study adopted a cross sectional research approach, where data was collected from respondents at a snapshot and thus such responses may be influenced by pertaining

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conditions of the individual at that particular point in time. The use of a different research approach such as longitudinal may provide significant differences in the findings

Finally, further studies could use the control variables (demographics; age, gender, income and education) as mediating or moderating factors to bring out the statistical differences in the research findings.

6.8 Research limitations and practical challenges

Geographical and time limitations

Presently about 2 million active users have adopted to the mobile money service across Ghana, active users according to the Bank of Ghana definition is consumers who have used the service in the last six months but studies was conducted for 320 respondents from Accra Metropolis based on convenience and Accra, the capital is populated by people with various demographic variables. Again, Accra houses the head offices of the three mobile operators. In the light of this, the scope of the study is limited geographically and numerically in terms of the sample size used for the study. Also the study is limited in terms of time constraints because for a study of this nature larger samples are required and a considerable amount of time and money is needed to achieve such a target. Furthermore it was difficult getting a lot of respondents for the study due to the hectic lifestyle in the capital, Accra. Despite these inadequacies, the generalizability of the results to mobile money population is deemed fit.

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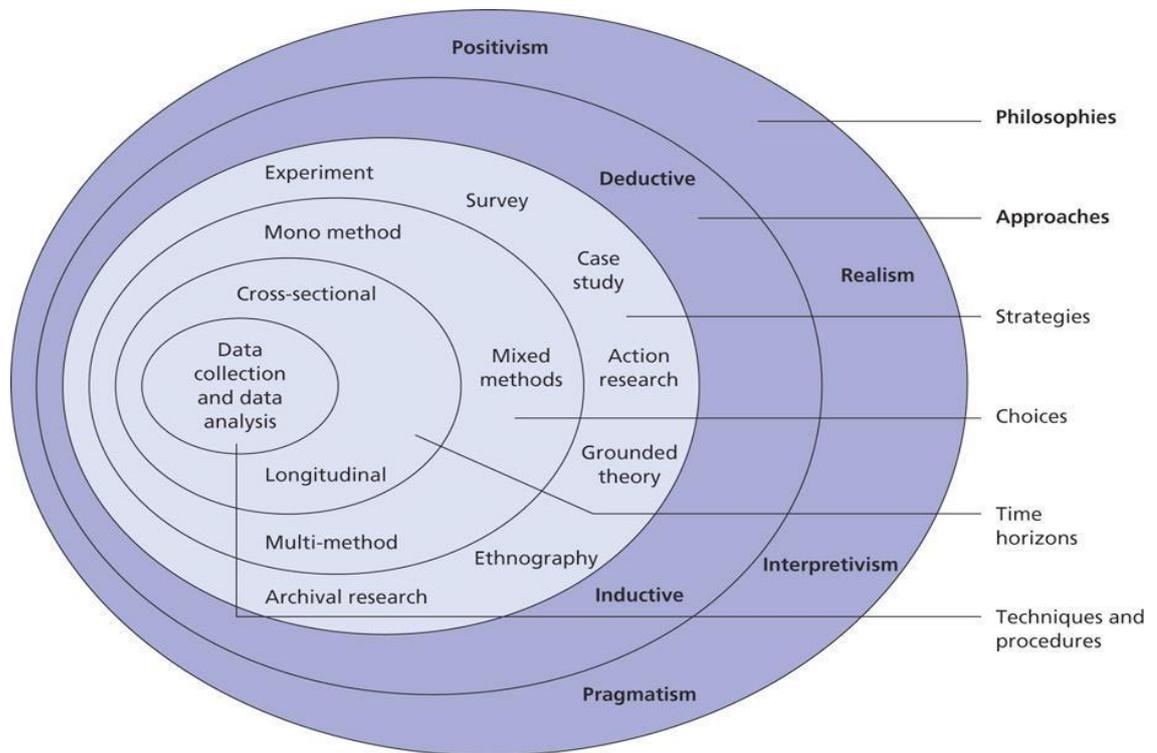
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APPENDICES

APENDIX A: Map of Ghana

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APPENDIX B: The Research Onion

APPENDIX C: INTERVIEW GUIDE

Research topic: Mobile money transfer in emerging markets: A case of Ghana

Sample frame: Mobile Money Operators in Ghana (MTN, Tigo and Airtel)

Geographic region: City of Accra, Ghana

Respondent:

Date of Interview:

I.   <u>Introduction</u>

My name is Harry Siaw Bampoe and I am a second year Mphil Marketing candidate at the University of Ghana Business School. I am conducting a survey to learn more about mobile money transfer services in Ghana. You have been chosen as one of the mobile money operators for this study

Participation in the study will require answering questions from a survey and will take approximately 15-20 minutes. Your responses are voluntary and any information that you provide will remain strictly confidential. If you agree to participate, you will be asked a series of questions and your responses will be recorded (either manually or by voice recorder) for statistical analysis. The data collected from this survey will only be used for educational and/or research purposes related to the completion of my thesis .You can refuse to answer any question or to stop the interview at any time. Withdrawing from the project will not result in any negative consequences for you or your business.
        If you have questions about the project, you may contact Harry Siaw Bampoe at
                0247817565, or hsbampoe@yahoo.co.uk.

By allowing me to check the first box, below, you agree to participate in the study. By allowing me to check the second box, below, you agree to have the interview recorded.

Please be aware that you will be given a copy of this form for your records.
I agree to participate in this study _____
I agree to have this interview recorded by a voice recorder _____

II   <u>When it started</u>

When did the mobile money start?

III   <u>Reasons</u>

Why have you started with the mobile money service?

IV   Process

How does the mobile money service work?

What are the processes involved?

Area of usage - money transfer, bill payments, payments

Ecosystem - necessary partners (stakeholders) and their role

V   Challenges

What are the challenges you face in spreading the technology further?

(Attitude of customers? Competition with banks? Infrastructure? Availability of agents)

Are the infrastructure (agents, coverage etc.) enough?

How do you see on the competition?

VI   Has it been meeting expectations?

1.   Is the service able to run as expected or does it still need improvements?

2.   Hard facts: number of users, number of transactions, number of agents

3.   Who are your target customer and user? General characteristics? Rural or Urban? Why?

4.   Benefits of the system to operators and customers?

VII Future projections

1.   What is your vision/projections of the future?

APPENDIX D: QUESTIONNAIRE

I am a postgraduate student at the University of Ghana, Legon and this questionnaire forms part of my thesis research for M.Phil. Thesis in Marketing. I am conducting a research about the **"Mobile money in emerging markets; the case of Ghana"**. Your contribution in completing this questionnaire is vital to the success of the study. This exercise is purely for academic purpose and all information will be kept strictly confidential. Thank you very much for participating in this study

SECTION A: DEMOGRAGHIC INFORMATION
Gender;   Male [ ]   Female [ ]
Age;   [ ] Less than 18   [ ] 18-25 [ ] 26-30   [ ] 31-40 [ ] 41-50   [ ] Over 50
Occupation; [ ] Self-employed [ ] Employed and student [ ] Employed [ ] Student [ ] Not employed
Level of Education (highest attained**);** [ ] PhD   [ ] Master   [ ] Bachelor degree [ ] Diploma/Certificate
[ ] High school or (SHS)   [ ] Junior High School or (JHS)   [ ] Primary [ ] No formal education.
Salary (GHC); [ ] below 500   [ ] 500-1000   [ ] 1001-1500   [ ] 1501-2000   [ ] Above 2000

SECTION B: MOBILE PHONE USAGE
1. Do you own or use a mobile phone?   Yes [ ]   No [ ]
2. Which is your Mobile Service Provider?   a. MTN [ ]   b. Tigo [ ]   c. Vodafone [ ]
     (Tick as many)   d. Airtel [ ]   e. Glo [ ]   f. Expresso [ ]
3. What do you use mobile phone for? [ ] Make & receive calls   [ ] Send & receive SMS
     (Tick as many as apply)   [ ] Listening to Radio   [ ] Play Games
                                      [ ] Download Ring tones   [ ] Use Bluetooth
                                      [ ] Surf the Internet   [ ] Mobile money services
Supplementary comment: ………………………...
SECTION C: MONEY TRANSFER USAGE
4. Are you aware of mobile money?   [ ] Yes   [ ] No
5. Do you use mobile money services?   [ ] Yes   [ ] No
6. If yes, which mobile money service do you use? [ ] MTN mobile Money [ ] Airtel Money [ ] Tigo Cash
7. How long have you been using mobile money?..........................
8. How many times have you used the service over the years? [ ] Daily [ ] Weekly [ ] Monthly [ ] Yearly
9. I utilize mobile money through;   [ ] Banks   [ ] Agents [ ] Retail shops
10. I use mobile money for the following activities: (Tick alongside the services you are familiar with)

[ ] Buying airtime   [ ] Receiving money [ ] Viewing recent mobile money transaction

[ ] Withdrawals   [ ] Paying bills   [ ] Saving/depositing   [ ] Sending money

If other, please specify…………………………………………………………………

11. Tick your rating only for the services you have used from above question.

To what extent are these services important to you?

Services	Very Important	Important	Less Important	Least Important	Not at all
a. Buying airtime					
b. Saving (depositing) into mobile money					
c. Withdrawing from mobile money					
d. Sending money					
e. Receiving money					
f. Paying bills					
g. Withdraw money from mobile phone					
h. Checking receipt of deposit into account					
i. View recent mobile money transactions					
j. Checking account balance with banks					

Section D: INTENTION TO USE MM AND ADOPTION FACTORS

12. Do you have any intention of using MMT?[ ] Yes   [ ] No   [ ] Unsure

For the following questions, please indicate to which extent you agree with each of the following statements.

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

No.	Perceived Ease of Use	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
13	I find mobile money service easy to use					
14	Sending SMS to recipients is easy					
15	The registration procedures are easy for me					
16	The interface with mobile money is user friendly					
17	It is easy for me to become skillful at using mobile money					
18	Mobile money process is easy to remember					
	Perceived Usefulness					

19	I find mobile money a useful way of making payment					
20	Mobile money helps save time					
21	MM makes it easier to conduct transactions					
22	I believe the advantages of mobile money would outweigh the disadvantages					
23	Mobile money helps me accomplish task quickly					
24	Mobile money have control over my financial activities					
	Perceived Trust					
25	I trust mobile money to send money correctly to recipients					
26	I receive exact money when it is sent to me					
27	Mobile money keeps proper records of all transactions with the service providers					
		SD	D	N	A	SA
	Perceived Risk					
28	If I lose my mobile phone, I will not lose my money as well					
29	If there is a network problem, my transactions will be affected					
30	It is difficult for my money to be stolen if using mobile money service					
31	There is a low risk of other people tampering with my personal information during the transaction					
	Transactional Cost					
32	Using mobile money for my transactions is not expensive					
33	Mobile money helps me save time and transport cost					
34	Mobile money registration is free of charge					
35	Affordable cost of replacement of SIM card					
36	Mobile money cost is acceptable compared to alternatives					
	Social Influence					
37	My friends are on a mobile money service					
38	My family are on mobile money service					

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39	Most social transactions I do are conducted on mobile money					
40	Mobile money is an acceptable way of conducting financial transactions					
	Intention					
41	I intend to continue to use mobile money					
42	I intend to use mobile money more frequently for transfers					
43	I enjoy making purchases with my mobile phone					
44	I intend to use MM for most financial purposes					
45	I intend recommending MM service to others					
46	I intend to patronize other services they introduce					
	Competitive Intensity					
47	Mobile money is cheaper compared to other financial services					
48	Mobile money is easy to use compared with the other financial services					
49	Mobile money is easy to access					
50	Mobile money opens at convenient times					