



School of Management

Mobile Banking and Entrepreneurship in Developing countries:
(A case study of Nigeria)

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2013

Abstract

The purpose of this study was to identify ways by which entrepreneurial mobile banking growth could be accelerated in developing countries. An exploratory research method was adopted to identify the facilitators and obstacles to entrepreneurial mobile banking. The finding reveals some facilitators which include government policies and efforts of donor agencies, stiffer competition among banks, need for efficiency and lower cost, telecoms focus on customers retention. While some obstacles include conservative and vague regulation, security issues, underdeveloped infrastructures, lack of interoperability and lack of basic need for financial services. The main contribution of this study is the concise identification of the facilitators and obstacles to entrepreneurial mobile banking especially in developing countries. Suggestion for further study was made. The findings could be useful to policy-makers, donor agencies and other development partners in designing and directing their policies intervention.

Key Words: Mobile Banking, Entrepreneurship, Facilitators and Obstacles, Entrepreneurial Mobile Banking, Developing Countries.

Acknowledgement

I wish to express my profound gratitude to God Almighty for making this study a success. My special thanks to my supervisor and the immediate past programme manager “Entrepreneurship and Innovation” Assistant Professor Urban Ljungquist for his support and professional advice that made this paper a whole. I sincerely appreciate your contribution, suggestions and guidance. I also want to thank the current Programme manager Philip Rouchy and the entire staff of the MAM department for their support.

My sincere thanks also goes to BTH for giving me the opportunity to study in this prestigious institution as well as for providing me with all the resources and facilities needed to make my studies worthwhile.

I am highly indebted with deep love and affection to thank my wife and kids for their support and encouragement especially for buying into aspirations and for taking the pain to let me go when I made the decision to embark on this academic journey.

Finally, I expressed my heartfelt appreciation to my parents, siblings, friends and my pastors for all their support and prayers during the course of my study.

Karlskrona, Sweden, 2013
Benjamin Odiniya Agenyi

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1. Introduction

One of the most popular and perhaps the fastest growing technology in developing countries is the mobile phones. Characterized by the use of prepaid cards and cheap mobile phones, several millions of phone users have made voice calls and text messages part of their daily lives (Donner and Tellez 2008). However, many of these mobile phones users live in informal/cash economies without access to financial services for either credit or savings. Studies indicate that there are more people in developing countries having mobile phones than those having bank accounts (Porteous 2006, EFINA 2012, Robert 2010, Nwangi and Njuguna 2009). Some of the identified factors for this trend include geographical distance, bureaucratic nature of banking services and inability of the poor to repay their loans. If a significant segment of the market is excluded from traditional banking services, then perhaps they could be offered banking services through mobile phone technologies.

Mobile phones appear to be a facilitator of affordable and accessible banking service in the developing countries. It is believed that mobile telephony has a significant positive impact on economic growth and that this impact could be twice in the developing countries than the developed countries (Waverman et al. 2005). The penetration of mobile telephony and the expansion of mobile money systems are creating opportunities for small businesses particularly in low income countries to access financial services (UNCTAD 2011). The opportunities for expansion are quite enormous but perhaps only those who understand the dynamics of the mobile money systems and their unique challenges would succeed in realizing the great potentials (Seymour Richard 2010). To realize these potentials, various steps have been taken to provide financial services to the “unbanked” (that is, those without bank accounts). Some financial services offered include: long distances remittances, micro payments and informal airtime exchange schemes (Donner and Tellez 2008). In some countries, governments have taken actions towards the implementation of mobile banking in the form of policy regulation (Ketkar et al. 2012; Reserve Bank of India 2009). In a nutshell the payment industry is experiencing a convergence of technologies and transactions processes as well as the integration of the payment systems. Mobile banking is a reality as mobile devices now have increased effectiveness in enabling secure and convenient payment transactions (Herzberg 2003).

Some policy-makers and development communities have expressed enthusiasm about mobile banking that the widespread use of such systems would be a desirable outcome for the unbanked in developing countries (Donner and Tellez 2008). Poor households not currently having access to financial services might thus benefit from having access, and the active use of mobile banking services may lead to further positive indirect economic impacts (Von Reijswould 2007). Mobile banking could help people in remote locations enjoy safe, secure and convenient banking services. Common banking services include: statement requests, funds transfers, balance enquiries, payments to third parties and of course the ability to purchase prepaid airtime (Jason Urbach 2007). Other benefits of mobile banking could be in the form of reduced loss of money to theft and the possibilities of increasing people’s sense of security in their communities.

The emergence of mobile banking in developing countries may have greater implications that could go beyond linking the unbanked to the financial networks. Its convenience could brighten entrepreneurial spirit in these countries (Vatten 2011). In many of the developing countries, banks and other mobile money operators have been encouraged to substantially increase their investment in mobile money technology for increased patronage (ThisDAY 2014). A key factor for the success of mobile money might be for corporate entrepreneurs to significantly make upfront investments and then patiently wait for the needed scale in order to reap the returns on their investment. In the past, successful mobile-money companies, like Safaricom in Kenya, have committed more funds than expected to make mobile money work. (MobileMoney Africa 2014). Mobile banking is not simple; it requires a careful and a thorough understanding of both customers and agents, and also the willingness to invest in both of these groups. If companies are not investing and stay committed, it might be difficult to grow and develop the industry (Mckinsey and company 2012, Ciuci Consulting 2014). Unfortunately, the current reality in many developing countries reveals that mobile money operators have not reached a scale high enough for the growth and development of the mobile money technology. Some of the reasons for this may include: Poor regulation, bad economic policies and weak infrastructure provisions.

1.1 The Problem Discussion

Globally, more than 2.5 billion adults do not have a formal account – half of the world adults' population – most of them in developing economies (World Bank 2012, 2014, CGAP 2013). Instead they depend on informal mechanisms such as buying of livestock, pawning jewelry as a form of savings and for protecting themselves against risks and often turn to moneylenders for credit (CGAP 2013). In other words, they are excluded from the traditional financial system and hence a need to include them. Financial inclusion refers to the proportion of individuals and firms that use financial services (World Bank 2014). It means that households and businesses both have access to and can effectively use appropriate financial services. Such services must be provided sustainably and responsibly in a well regulated environment (CGAP 2013). Financial inclusion and by implication well-functioning and inclusive financial systems, (allowing broad access to appropriate financial services) are likely to benefit poor people and other disadvantaged groups (World Bank 2013). For example, access to formal savings and credit mechanisms may enhance investment in productive activities such as entrepreneurship or education (World Bank 2013). Therefore, an inclusive financial system appears to be associated with lower poverty.

Over the last few decades, studies have not only shown that poor households need access to full range of financial services to generate income, managed risks, build assets and ensure smooth consumption, but also that the more limited microcredit model cannot provide such range of financial services (CGAP 2013, 2008). Thus, there has been a need for continued product and business model innovation which can reach more people with a broader range of financial products at lower costs. One of such innovation is the use of mobile phone-based business models (CGAP 2013). A key success factor for this innovation might be the creation of

an enabling regulatory environment that balances the needs of promoting access to finance with the stability of the financial system. This growing awareness makes it imperative to know how an enabling environment could be created for the thriving of mobile banking innovation in developing countries.

Mobile banking is defined as the provision and availing of banking and financial services with the help of mobile telecommunication devices (Rajnish and Stephan 2007). Scholars have expressed enthusiasms about mobile banking that the wide spread of such system could be a desirable outcome for the unbanked as it has the capacity to support inclusive and sustainable development, boosting shared prosperity and reduce extreme poverty, (Donner and Tellez 2008, CGAP 2012, World Bank 2014). As a result, the roles of mobile banking in financial inclusion in developing countries have generated a great deal of debate among scholars, practitioners and even development communities in recent years (World Bank 2014, 2013, Porteous 2006; CGAP, 2013, 2012, 2008 RBI 2009). However, despite this heightened interest in the importance of mobile banking for economic and social development, very little academic research has explored the use of these mobile banking systems in developing countries.

Previous research on mobile phones, m-commerce and mobile banking covered themes like: the impact of mobile telephony on developing country micro-enterprises (Abi 2008); Mobile payment in emerging markets (Nir and Sharad 2012); the roles of mobile phones on poverty alleviation in developing countries (Jason 2007); the drivers and inhibitors of mobile banking (Mari et al. 2005); M-PESA: mobile money for the “unbanked” (Hughes and Lonnie 2007); Trends in Mobile Payments in Developing and Advanced Economies (Darren et al. 2013); Emerging Trends on Functional Utilization of Mobile Banking in Developed Markets (Shripad Ramankant 2011); Exploring consumer adoption of mobile payments (Niina Mallat 2007); from microfinance to m-finance (Kapoor et al. 2007); Adoption patterns (Brown et al. 2003; James 2013; Nicole et al. 2010); inquiring into existing models (Yakub et al. 2013); Model and mapping of mobile banking (Ketkar et al. 2012).

The above depicts the patterns and trends of mobile banking researches. The major focus has been on the impact and adoption of mobile banking with little or no studies conducted on the supply side (the entrepreneurial mobile banking). Studies that investigated the drivers and inhibitors/influencers of mobile banking (Mari et al. 2005, Ketkar et al. 2012, BCG 2007) was done in the developed countries (e.g. Finland) and in Asia (India, a medium income country) with none of such studies conducted on any of the low income developing countries. There appears to be a gap in research on this region. In a review of 43 research work conducted in the field of mobile banking, Duncombe and Boateng (2009) found that, out of the ground-level surveys conducted, a greater proportion was by consultants rather than by academic scholars. They argued that academic research and conceptual understanding of mobile phones in the development of financial services is lagging behind the rapid pace of changes on ground. They also identified lack of geographical diversity in the research. This makes the current knowledge to be based upon relatively narrow evidence. In addition, a literature review of mobile finance carried out in the industrialized countries by Dahlberg et al. (2008) and Shahrokhi (2008) revealed the dominance of consumer driven approach and the application of business-driven

models over the analysis of social, economic and cultural factors. In recent years some studies have been conducted but yet did not answer the call by these researchers.

With the exception of Kenya entrepreneurial mobile banking growth has been very slow in developing countries (Paul Mburu 2012). It might be insightful to study what are the factors aiding and hindering mobile banking as an innovative financial service in developing countries so as to identify causes of the low growth as well as means through which the growth could be accelerated.

1.2 Problem Formulation and Purpose

From the above discussion, some problems were identified.

- There is little academic research about entrepreneurial mobile banking especially in developing countries. The greater part of mobile banking researches were carried out by consultants.
- There is lack of geographical diversity in the current available knowledge on mobile banking. Developing countries' institutions and researchers have not taken active parts in investigating mobile banking. The result is that the available knowledge is based on narrow evidence.
- Entrepreneurial mobile banking growth has been very slow in many developing countries except in Kenya.
- A key success factor for mobile banking might be the creation of an enabling regulatory environment that balances the needs of promoting access to financial services, with the stability of the financial system. This growing awareness makes it imperative to know how an enabling environment could be created for the success of mobile banking innovation in developing countries.

Collectively, these gaps in the literature in addition to their practical importance present a research problem that requires an investigation. The primary research question is:

- Which are the facilitators and obstacles to entrepreneurial mobile banking in developing countries?

The purpose of the study is to identify ways by which entrepreneurial mobile banking growth in developing countries could be accelerated. The thesis contributes to the understanding of entrepreneurial mobile banking by the concise identification of the facilitators and obstacles to entrepreneurial mobile banking especially in developing countries. The significance of this study include the fact that its findings could provide guidance to policy-makers, donor agencies and other development partners as a guide in the formulation and direction of policies aimed at financial inclusion.

1.3 Delimitation

The focus of this thesis is on entrepreneurial mobile banking in developing countries. It is not the purpose of the thesis to investigate consumer adoption of mobile banking and entrepreneurial adoption decisions.

1.4 Structure of the Thesis

Chapter 1 gives an introduction of the Research problem, the primary research question as well as the delimitation of the study. Chapter 2 presents the main theories that are both relevant and necessary to answer the research question. In particular, literature on mobile banking and entrepreneurship were discussed. The chapter ends with some propositions and conceptual model that serve as the basis of the analysis chapter. The methodology is the focus of Chapter 3. Here, the methods and techniques to investigate the research problem are presented. It also includes the choice of the research method, data collection and the techniques for analysis as well as the discussion on the quality of research.

Chapter 4 and 5 consists of the Case description and Analysis respectively. In the analysis chapter, empirical findings are presented. Discussion of the findings forms the basis of chapter 6. Finally, chapter 7 consists of the conclusions, suggestions for further study, limitations and policy recommendations.

2. Theory

This chapter begins with the description of the concept of mobile banking and the services that could be offered by mobile banking. It is followed by a description of the related models and theories of mobile banking. It goes on to discuss the concept of entrepreneurship, entrepreneurial opportunities and its sources, the roles of entrepreneurship in economic development, the description of entrepreneurial mobile banking and the factors influencing entrepreneurial mobile banking. It ends with the proposed research model which forms the basis of the empirical study.

2.1. The Concept of Mobile Banking

Mobile banking has been defined by a number of authors. Georgi (2005 p. 57) defines “mobile banking as the carrying out of banking business with the help of a mobile device such as mobile phones or Personal Digital Assistant (PDAs)”. Mobile banking is one of the innovative services deliveries which have been adopted by banks and other organizations dealing with financial services in the market (Paul 2012). It is also defined as an emerging facet of electronic banking that, unlike the traditional banking services, offers a rich platform for automated banking and other financial services (Wessel and Drennan 2010; Zhou 2011). Peevers et al. (2010) shows mobile banking as applying to customers using their mobile device to perform banking activities. They also looked at mobile banking as services diversification, in that, banks offer increased value to customers. Yet other authors like Rajnish and Stephan (2007) defines mobile banking as the provision and availing of banking and financial services with the help of mobile telecommunication devices. The scope of the offered services may include facilities to conduct bank and stock markets transactions, to access customized information and to run accounts. Porteous (2006) defines mobile banking as including mobile payment but involves access through mobile devices to broader range of financial services like account-based savings or transactions product offered by bank. According to Porteous, both mobile payment – which he defined as financial transactions undertaken using mobile devices such as a mobile phone – and mobile banking, are subsets of a broader domain of e-payment and e-banking respectively. In this study, Porteous’ definition is adopted and mobile banking is broadly defined here to include mobile payment.

Mobile banking can support a variety of services. It has been recognized as a driver of socio-economic development in emerging markets (Nir and Acharya 2012). In particular, it facilitates person-to-person transfer of funds which is very important for emerging economics because it offers financial services to the unbanked. According to Nir and Acharya (2012), it has also helped to facilitate emergency response and disaster recovery. Mobile phone operators have seen mobile banking as a potential service to offer customers and hence increase their loyalty while generating fees and messaging charges (infoDev 2006). Financial institutions which have had difficulty providing profitable banking services through traditional channels see mobile banking as branchless banking (Ivatury and Mas 2008; Donner and Tellez 2008).

Similarly, mobile banking offers a number of banking functions including micropayments to merchants, bill payments to utilities suppliers, person-to-person transfers of funds, and long distance remittances (Donner and Tellez 2008). According to Donner and Tellez

(2008), most mobile banking in developing countries enable users to do three different types of transactions:

1. Store value in an account accessible via a mobile phone. In this case, if the user already has a bank account, their bank account is linked to it and if not, the process creates a bank account for them.
2. Convert value in or out of the store value account. Here, if the mobile banking account is linked to a bank account, users can visit the bank to carry out the cash transactions. If otherwise, the user can visit the GSM operator retail stores and in a more flexible situation, visit the corner kiosk or grocery shops to perform their transactions.
3. And finally, transfer stored value between accounts linked to two mobile phones by using a set of SMS messages and pin numbers.

Besides these benefits, Ignacio Mas (2010 p.10) identifies that mobile banking could be beneficial to all in many diverse ways. This is possible if everyone has access to secured saving accounts serviced through technology-enabled retail networks, and connected to the national payment systems including households, government and commercial providers. Ignacio points out that poor people would be better off as mobile banking affords families the opportunity to accumulate balances for lump-sum investments in their businesses. It also helps to cushion them against unexpected events and connect to wider economy through electronic remittances, wage payments and social payments. Women also would benefit as they could accumulate savings outside of homes thereby increasing their decision-making power over households' resources allocation. Ignacio stated further that many benefits could also accrue to government agencies. Firstly, the development ministry could ensure that households have savings tools to self-insure against shocks and accumulate funds to purchase other development inputs. Secondly, the central bank could gain a better handle of the velocity of money in the economy by reducing cash holding under the mattress. Thirdly, it could benefit the ministry of finance as it affords her the opportunity for cost effective collection of taxes and fines. Also it could benefit the social ministry who could distribute welfare payments more cheaply, effectively and directly into people's accounts even if they live in remote rural towns. Mobile banking could provide an extended history of transactions which could make tracing suspicious financial transactions quite easy. Finally, it can help politicians connect the previously disenfranchised people. This access reduces the vulnerability of the poor and hence tends to build or promote political and social cohesion.

2.1.1 Mobile banking services

According to Rajnish and Stephan (2007), services offered by mobile banking can be classified into three categories: mobile accounting, brokerage and financial information. Mobile accounting is defined as transactions based banking services that revolves around a standard bank account and are conducted via mobile devices (Georgi and Pinkl 2005 p.57, Rajnish and Stephan 2007 p.60). Mobile accounting can be further divided into account operation and account administration. Account operation refers to the activities that involve monetary transactions which may involve an external account such as when paying bills, or internal

account such as transferring funds from one saving account to another (e.g., transfer of funds between sub accounts, money remittances). Account administration refers to activities that aid an account holder to maintain their account and this may include access administration, cheque book requests, change operating accounts and block lost cards.

Another service offered by mobile banking is mobile brokerage. This in the context of banking and financial services is defined as the intermediary services related to the stock exchange centre such as sales and purchases of stocks, bonds, funds, derivatives and foreign exchange among others (Rajnish and Stephan 2007). In other words, it is mobile financial services of non-informational nature revolving around a securities account (Georgi and Pinkl 2005). Like mobile accounting, it is also divided into two categories - account operation and account administration. This helps to differentiate between services required to operate a securities account and services required to administer such accounts. Therefore it requires informational services usually offered alongside mobile financial information. Account operation here is primarily concerned with the sale and purchase of financial instruments such as placing and cancellations of orders to sell or purchase securities. Account administration could be in the form of access administration, where a mobile device can be used to modify account details.

Georgi and Pinkl (2005 p.57), refer to mobile financial information as “*non-transaction based banking and financial services of informational nature which could be inform of account information or market information*”. Information services are necessary part of mobile accounting and brokerage but can also be offered independently (Rajnish and Stephan 2007). Mobile financial services are usually provided by financial services institutions and are subsets from both banking and other financial institutions. They are meant to provide customers with relevant information anytime anywhere. Such information may concern the bank, the securities account of the customers or market development.

Regarding mobile financial information, account information refers to information that is specific to a customer and their bank even though it may not involve a monetary transaction. Such services include, balance inquiries, account statement, list of latest transactions, branch and ATM locations, transaction threshold, product information and offers, returned cheques among others. On the other hand, market information refers to the information on the macro-level which is not related to a specific customer account. It may be generated externally (e.g. central bank interest rates) or internally by individual banks (e.g. bank interest rate).

2.1.2 Models used to describe Mobile Banking

Two most commonly used models in the mobile banking research literature are the Technology Acceptance Model (TAM) (Davies 1989) and the Innovation Diffusion Theory (IDT) (Rogers 1985). Technology Acceptance Model helps to explain how users would accept some end-user computing technologies (Davies 1989; Davies et al. 1989 and Chen 2008). This model postulated that perceived usefulness (PU) and perceived ease of use (PEOU) are the primary determinants of system use. According to Davies (1989, Chen 2008 p.37), PU is defined as the “*the prospective user’s subjective probability that using a particular application would*

increase his or her job performance within an organization context". While PEOU "*refers to the degree to which the prospective user expects the target system to be free of effort*" (Davies et al. 1989). Chen (2008) stated that the model was based on the hypothesis that "actual usage of a system is a function of user's Behavioral Intention (BI) to use, which is in turn influenced by user attitude to using (A)." Finally (A) is directly affected by the belief about the system which consisted of PU and PEOU.

On the other hand, the Innovation Diffusion Theory (IDT) (Rogers 1962, 1983, 1995) explains among many things, the process of innovation decision process, the determinant of the adoption rate and the various categories of adopters (Chen 2008). It helps to predict the likelihood and the rate of the technology being adopted. An innovation is an "*Idea, practice or object that is perceived as new by an individual or another unit of adoption*" (Rogers 1995 p.10) and diffusion refers to "*the process by which an innovation is communicated through certain channels over time among the members of a social system*" (Chen 2008 p. 37). Innovation diffusion is achieved through user acceptance of a new idea or a new thing (Zaltman and Stiff 1973).

Although originating from different disciplines, TAM and IDT have some resemblances. The relative advantage construct in IDT is often viewed as the equivalent of PU construct in TAM, and the complexity construct in IDT is very similar to PEOU concept in TAM (Moore and Benbasat 1991). Empirical studies have suggested that TAM should be integrated with other acceptance and diffusion theories to improve its predictive and explanatory power (e.g. Hu et al., 1999). By including the compatibility (C) construct of IDT, the model is able to address the social context in which m-payment takes place. C is evaluated by assessing the innovation's compatibility with existing beliefs and values, potential adopters' needs and previously introduced ideas (Rogers 1995). These two models are the most influential theories in explaining and predicting system use and innovation adoption (Chen 2008). Both theories have been proved to be highly successful in empirical studies (Chen 2008) (e.g., Taylor and Todd 1995; Igbaria, et al. 1995 among others). They have also been very effective in studying e-commerce applications (Chen et al. 2004). In particular, TAM has been used to provide theoretical foundation for M-commerce issues (Yu 2003), Mobile services (Kioyumaki 2006) and Mobile data services (Lu 2007).

Efforts have been made to develop complementary models to the Technology Adoption Models (TAM) to accommodate these product contexts. This is because of the specific product context of mobile banking such as the difficulty to assess some of its experiential qualities and its inherent risk factors which are prevalent in new financial services technology. One of such complementary models was the "Benefit-cost framework" developed by Yung-Cheng et al. (2009) to study the consumers' adoption of the mobile banking system. According to this framework, the key benefit of mobile banking is convenience while the key cost is security. It then modeled a set of abilities and risk factors via Structural Equation Model (SEM) as the antecedents of cost and benefits of adopting the mobile banking system. The framework suggested that in taking the decision to adopt a new technology such as mobile banking, consumers would consider both cost and benefits and the tradeoff (Cooper and Slagmulder

1998). This framework, like its counterpart, has been used to study the technology adoption behavior. For example, the adoption of advanced technology in Canada (Baldwin and Lin 2002), the adoption of the WLAN technology in the hotel industry (Christophe and Pratim 2006), the adoption of new engine and fuel technology (Keefel et al. 2008) and to study Web based training programs in organizations (Chan and Ngai 2007).

Other models include addictive and transformational banking models (Porteous 2006). Porteous differentiated addictive banking models from transformational banking models. Addictive banking models refer to the situation where the mobile banking services complements services offered by other banking systems. Some of these other services include checkbooks, ATMs, point of sales network, smartcards, voicemail, landline interface and internet resources. In this case, the mobile channel provides additional convenient methods of managing money without handling cash (Donner and Tellez 2008; Peter 2012). Similarly, transformational banking models are those in which the financial product linked to the use of mobile phone is targeted at the unbanked most of who are low income earner. Porteous further pointed out that a service becomes transformational when it causes a shift in the access frontier. It therefore means that the transformational models bring about new accounts to non-banking customers. This distinction is quite important because it provides guidance for the industry, researchers and policymakers in assessing the usage and impact of mobile banking (Donner 2007). Transformational mobile banking service has been viewed as one of the most important channel to bringing financial services to largely unbanked population of developing countries (Peter 2012).

In addition, Robert (2010) used the “open federated brick and click mobile banking model” to describe the phenomenon of mobile banking. This model consisted of three different sections that highlight what is needed to provide financial services to the poor. The models argued that, poor people in the rural areas, unlike their urban counterpart, must first be provided with incentives in terms of microfinance, investment advice, banking advice and mobile based banking services. This should enable them improve upon their living conditions.

A summary of existing models is presented as follows:

- “Technology acceptance model” (TAM) was used to explain the determinants of user acceptance of a number of end-user computing Technologies (Davies 1989; Lu 2007; Yu 2003)
- “Innovation Diffusion Theory” (IDT), explains in addition to other things, the process of Innovation decision processes, the determinant of the rate of adoption, and the various categories of adopters. It also helps predict the likelihood and the rate of the Technology being adopted (Rogers 1962, 1983, 1995, Chen 2008).
- The “benefits cost framework” investigated the specific product context of mobile banking such as the difficulty to assess some of the experiential qualities of mobile banking and the inherent risk factors which are prevalent in new financial services technology (Yung Chen et al. 2009).
- The addictive and transformational model investigated mobile banking from a development perspective and highlighted how financial inclusion could be achieved with

the use of mobile phones (Porteous 2006).

- The “open federated brick and click” mobile banking model describes the phenomenon of mobile banking (Robert 2010).

There is a need for an alternative model. This is based on the fact that the existing models do not capture the scope of this study which intends to investigate the various variables that facilitate and that hinder entrepreneurial mobile banking.

2.2. The Concept of Entrepreneurship

The term “entrepreneurship” has been defined by various authors. Shane (2003, p.4) defines entrepreneurship as “*an activity that involves the discovery, evaluation and exploitation of opportunities to introduce new goods and services, ways of organizing, markets and raw materials through organizing efforts that had not previously existed*”. However, given his own critique of the definition that it is difficult to operationalize in empirical research, Shane (2003) provided two operational definitions of entrepreneurship used in empirical research. On the one hand, he defines entrepreneurship as “new firm formation” – forming of a new business venture or a new non-for-profit organization. On the other hand, he defines it as “self-employment” which is performing work for personal profit rather than for wages paid by others.

Henry (1968, p.228) quoting Benjamin Higgins, defines entrepreneurship as “*the function of seeing investment and production opportunities, organizing an enterprise to undertake a new production processes, raising capital, hiring labor, arranging for the supply of raw materials, finding a site and combining these production factors into a going concern, introducing new techniques and commodities, discovering a new sources of natural resources and selecting top managers for day to day operations*”. Henry argues that the concept of entrepreneurship could be divided into at least three sub functions: Entrepreneurship in the Schumpeterian sense (that is, seeing and seizing opportunity for a new economic venture), financial risk taking and managerial function. Henry stresses further that the key figure in the process of technological advance is the entrepreneur who sees the opportunity for introducing the new commodity, technique, raw material or machine and brings together the necessary capital, management, labor and materials to do it. The entrepreneur may or may not be the scientific inventor, having skills that are less scientific than organizational, and having skills which are also different from that of the salaried managers who takes over the business after it has been launched (Henry 1968).

According to Henry (1968), his argument for at least a three-way division of entrepreneurial activities stems from the reconsideration of the behavior of firm where the total entrepreneurial functions are divided into three separate subfunctions. As stated earlier, the first of these entrepreneurial sub-functions is *innovation* in a Schumpeterian sense: to reorganize new business opportunities which result from new technological knowledge or environmental changes. In this case it does not matter whether the opportunity is for a new product or service but the crucial element is the innovative aspect of entrepreneurship. The second sub-function of entrepreneurial activities is that of “risk taking”. Someone must undertake the risk of financing a new venture and in a capitalist economy, the motive for such risk is the potential profit that could

be gained. Finally, the third sub-function which was excluded by Schumpeter is that of actually running the enterprise after it has been organized.

Howard (2006, p.3) sees entrepreneurship as a management approach that is defined as follows: “*the pursuit of opportunity without regard to resources currently controlled*”. This definition stems out of his criticism of the various schools of thought on entrepreneurship which he roughly divided into those that define entrepreneurship as an *economic function* and those that identify entrepreneurship with *individual traits*. The functional approach focuses on the role of entrepreneurship in the economy. The proponents of this view according to Howard include Richard Cantillon (1680-1734), who argued that entrepreneurship entailed bearing the risk of buying at a certain price and selling at an uncertain price; and Jean-Baptiste (1767-1832) who broadened the definition to include the concept of bringing together the factors of production. Schumpeter (1911) added the concept of innovation to entrepreneurship. However, the focus on individual traits identified certain common characteristics among entrepreneurs to include the need for achievement, perceived locus of control and risk taking propensity. He stresses that neither of the approaches was sound (Howard 2006). Gartner (1988) suggests that entrepreneurship is the creation of new organizations. Low and Macmillan (1988) define entrepreneurship as the creation of new enterprises, consistently stating “new venture” and “new enterprises” rather than new firm or new organization and stressed on the creation of new economic activities regardless of what type of organization introduces it. Similarly, Stevenson and Jarrilo (1990) define entrepreneurship “as the process by which an individual either on their own or within an organization pursue opportunities without regard to the resources they currently control”.

2.2.1 Necessary conditions for entrepreneurship

Shane (2003) identifies the presence of entrepreneurial opportunity, differences between people, willingness to take risk, organizing and innovation as conditions for entrepreneurship. Entrepreneurship requires the existence of opportunities. The argument was that while people’s perception influences the identification, evaluation and exploitation of opportunities, opportunities themselves are available to all. Thus, entrepreneurship is a function of the perception of opportunities for profit. According to this view, entrepreneurs combine resources to fulfill unsatisfied needs or to improve market inefficiencies or deficiencies (Wennekers and Thurik 2002).

Entrepreneurship requires variation between people and in a more specific term, it requires preferential access to or ability to recognize information about opportunities. The existence of this variation is a necessary condition for entrepreneurship. This is because in the absence of such differences everyone would recognize the opportunities and act on them thereby making it impossible to make profit. In other words, resources owners would recognize the same opportunities and simply would be unwilling to sell those resources at a price that would be profitable to the entrepreneurs. These variations in people must also reflect in their decision-making ability (Shane 2003).

Another necessary condition for entrepreneurship is risk taking (Shane 2003). The profit potential of opportunities is uncertain. This is because, the information needed to determine whether a particular effort would be profitable cannot be known with certainty beforehand. This is not unexpected since the pursuit of opportunity itself could determine whether there is a demand for the product or services, whether the entrepreneur can compete with others and whether value can be created (Shane 2003; Arrow 1974; and Venkataraman 1997).

Entrepreneurship requires organizing. It requires new ways of exploiting the new and existing opportunities (Shane 2003; Per et al. 2006). An innovative entrepreneurial act might be a new process of organizing.

2.2.2 Meaning of Entrepreneurial opportunity

Shane (2003) defines entrepreneurial opportunity as a “*situation in which a person can create new means-end framework for recombining resources that the entrepreneur believes will yield profit*”. Entrepreneurial profit is the difference between the ex-post value of a resource combination and the ex-ante cost of obtaining the resources, also factoring in the cost of recombining them (Rumelt 1987). The main difference between entrepreneurial opportunity and many other situations in which people seek to make profit is that an entrepreneurial opportunity is the creation of new means-ends framework rather than optimizing within the existing framework (Shane 2003). Casson and Wadeson (1982) and Jeffrey et al. (2007 p.280), define entrepreneurial opportunity as “*a project that would form part of the optimal set if information was not scarce but which were not in operation because information is scarce to generate goods and services*”.

Two perspectives on the existence and sources of entrepreneurial opportunities are those of Schumpeter (1934) and Kiezner (1973). The main difference between these two perspectives is their disagreement over whether the exploitation of entrepreneurial opportunities involves the introduction of new information or just differentiated access to existing information. While Kizner (1973; 1985; and 1997) argued that the existence of opportunities requires only differentiated access to existing information and that people use the information that they possess to form beliefs about an efficient use of resources, Schumpeter (1934) argued that new information is important in explaining the existence of entrepreneurial opportunities.

Following Kiezner’s view, Gaglio and Katz (2001) explained that because people’s decision-making frameworks are not always accurate, they make errors when they make decisions which in turn create shortages or surpluses. Hence, by responding to these shortages and surpluses, people can obtain resources, recombine them and sell the output in the hopes of making a profit (Shane and Venkataraman 2000; Shane 2003). On the other hand, Schumpeter argued that changes in technology, political forces, regulation, macro-economic factors and social trends can create new information that entrepreneurs can use to create a new means–ends framework for recombining resources at a profit. This view is based on the fact that these changes alter the equilibrium price of resources and allow people to have access to new information which helps to purchase resources at low prices, recombine them into more valuable

form and sell the output with expectation of a profit (Shane 2003; Shane and Venkataraman 2000; Schumpeter 1934).

2.2.3 Sources of entrepreneurial opportunities

The existing literatures on entrepreneurship have more information about the sources of Schumpeterian opportunities than that of the Kieznarian. Shane (2003) stressed that the reason for this trend could be the potential value of Schumpeterian opportunities and the trait that the sources of Kieznarian opportunities are idiosyncratic. Hence, much better explanation and empirical evidences exist for Schumpeterian opportunities. Based on this view, Shane (2003) divides the sources of opportunities into three major groups. These are: changes in technology, changes in politics and regulation, and changes in social and demographic factors. These different groups have certain things in common.

The first notably common feature is that they alter the value of resources thus upsetting the equilibrium prices of resources and create the potential for entrepreneurial profit. According to Shane (2003 p.23), the invention of computer for instance created an opportunity to manufacture and sell microchips. The knowledge of the opportunity suggested that the material used to manufacture chips were underpriced and could be profitably recombined into a new form. Similarly, government regulation with regards to the use of car seats for infants created an opportunity for entrepreneurs to buy idle factories and use them to make these devices for sale to consumers. Also, the entry of women into the workforce in large numbers, a socio-demographic change, led to the dramatic growth in the need for prepared foods and as a result any individual who sensed this opportunity could purchase the necessary ingredients and prepare food for sell to consumers.

Sander et al. (2002) identifies certain society level conditions (sources of entrepreneurial opportunities) for entrepreneurship to include technological, economic, cultural, demographic and institutional changes. Leif (2006) stated that entrepreneurial opportunities emanate from societal factors, for example, business services. Holcombe (2003) identifies three general sources of entrepreneurial opportunities: factors that dis-equilibrate the market, factors that enhance production possibilities and from the activities of other entrepreneurs.

Following Kieznar's view, Holcombe (2003) places emphasis on the equilibrating function of entrepreneurship and focuses attention on factors that dis-equilibrate the market e.g. *preferences*. He stresses that other entrepreneurial opportunities might arise from factors that enhance production possibilities since such could also dis-equilibrate the market if unanticipated. However, the most important source of entrepreneurial opportunities is the activities of other entrepreneurs (Holcombe 2003). According to this line of thought, when an entrepreneur takes an advantage of a previously unnoticed profit opportunity, it could further create new profit opportunities for other entrepreneurs. The process might continue cascading through the economy thereby creating additional opportunities (Holcombe 2001).

2.2.4 The role of entrepreneurship in economic development

Entrepreneurship has since been recognized to play a major role in economic development (Naude 2008). Economic development is the process of structural transformation of an economy towards a modern technologically advancement based on services and manufacturing (Naude 2008). According to Naude, the process involves not only qualitative changes to the nature of an economy, but also accompanying quantitative changes in terms of the productivity and output per person. For these qualitative and quantitative changes to be generally seen as economic development, they must result in clear improvements in human welfare. In both the qualitative as well as the quantitative dimensions of economic development, entrepreneurship could make a positive contribution to economic development: create jobs, ease fiscal burden, and provides competition (Naude 2008).

In a dual economy, entrepreneurs share in the surplus production. It is assumed that entrepreneurs have much higher saving rates than workers and they re-invest surpluses in expanding the modern economy (Lewis 1954). This was based on the view that rise in total saving is a prerequisite for economic development. The rise in total saving was believed to originate from “unlimited supplies of labor” which keeps wage constant thereby allowing the entrepreneurs to reap and reinvest their surpluses. In theory, there are three reasons why the entrepreneurs have higher tendency to save including:

- to accumulate enough capital to start or expand a business in the presence of credits market failures,
- to reduce the need for expensive borrowing,
- and as a precaution given that entrepreneurship carries more risks than paid employment (Cagetti and De Nardi 2005).

Entrepreneurs in the modern economy provide an environment for human capital accumulation once the institutional framework is conducive (Dias and McDermott 2005). Entrepreneurs do help in *knowledge accumulation* in an economy (Naude Wim 2008). In this regard, Peretto (1999) recognize the need for knowledge accumulation (Innovation driven economy). He stresses that knowledge accumulation is easier in certain areas such as manufacturing, services and urban agglomerations. Based on this view, three interrelated sources of productivity growth that determine how an economy can be transformed from capital accumulation to knowledge accumulation were identified. They include allocation of talent (Murphy et al. 1991), the accumulation of human capital (Perreto 1999) and technological progress (Ciccone and Matsuyama 1996).

Entrepreneurs initiate investments in the modern sector once they perceive profitable opportunities. They facilitate the re-allocation of production factors from the traditional to the modern sector (Rada 2007). According to Rada (2007), since the modern economy requires a higher level of skilled labour, entrepreneurship causes an increase in demand for educated labour. This should lead to an overall improvement in human capital in a country. The central theme of this view is that rapid expansion of skilled labour can only be absorbed if entrepreneurial ability is high, and that without entrepreneurial involvement, the returns to physical and human capital is low (Pack and Nelson 1999). During the stage where growth and

productivity are driven by knowledge accumulation, countries must generate and commercialize new knowledge. This requires, amongst others, cooperation between researchers and entrepreneurs. Researchers/inventors need to be matched with suitable entrepreneurs (Michelacci 2003). One way of improving this cooperation or matching is through linkages between universities (researchers), private firms (entrepreneurs), and government (subsiding research and development) (Wennekers et al. 2005).

Entrepreneurship plays a major role in imitation of foreign technology. Schmitz (1989) and Naude (2008) stress the importance of imitation by entrepreneurs and argue that it may be more important for the majority of developing countries than new knowledge generation. There is great uncertainty in the adoption of foreign technology, and a measure of the entrepreneurs' abilities is how well they shoulder this risk. In addition, entrepreneurship creates a positive outlook through bringing new goods to the market and in the process show how new technology can be applied (Hausmann and Rodrik 2003). In the absence of entrepreneurs, resources would continue to be devoted to functions where returns are low thereby leading to an ossified economy in which resources are underused.

Finally, entrepreneurship brings about new start-up that drives economic structural transformation and growth (Naude 2008). Studies have shown that start-up firms are the ones most likely to grow and to create new jobs (Lingelbach et al. 2005; Johnson et al. 2000; Audretsch et al. 2006; McMillan and Woodruff 2002). This is particularly true in transition economies where there are no significant private sectors players. In such economies, for example China, new firms often strengthen reforms by improving economic conditions. One reason for this significant impact is that they are less burdened with the society's historic influences (Estrin et al. 2006).

2.3 Factors Influencing Entrepreneurial Mobile Banking

Government policy and initiatives of development communities: The desire for financial inclusion of the previously unbanked segment of the population and its attendant policy guidelines by many governments of developing countries appear to be vital to mobile banking. In some countries, governments have taken steps towards the implementation of mobile banking in the form of policy regulation (Ketkar et al 2012, Reserve Bank of India, 2009). The initiatives of non-governmental and international development organizations have facilitated the diffusion of mobile payment in developing countries (Nir and Acharya 2012). For example, the M-pesa system was developed by the Department for International Development (DFID) a UK based development organization that manages UK's aid to developing countries. Similarly, the GSMA development fund and Gates foundation started the mobile money for the unbanked program which target people living below USD 2 per day in Pakistan. The easy paisa got a grant of USD 6,5 million from Gates foundation (Nir and Acharya 2012). However, the implementation of mobile banking varies depending on who takes the lead (Booze, 2008), how supportive the financial services regulation in the country is (GSM association 2007), and whether mobile are deployed for addictive or transformational banking (CGAP, 2008)

Stiffer competition among banks: The need for banks to improve their reach and cost of delivery given the fact that the cost of branch operations have been on the rise necessitated banks managements to opt out for technology tools that could help improve their reach and reduce their cost of services delivery (Kamesan 2003). By compressing time, overcoming geographical constraints, restructuring relationship between senders and recipients and leveraging contextual information, bank can see increased efficiency in operation, improved effectiveness in decision making and innovative business processes that would generate competitive advantage (Chen and Nath, 2004). Thus, the large numbers of mobile phones subscribers in the developing countries offer big opportunities for banks to reach out to remotes areas. Also the high rate of urban teledensity in these countries presents banks with attractive targets to replace the plastic money by mobile based credits/ debits cards. In addition, bank products (being services) are necessarily intangible and are increasingly sold with the help of computer networks spanning across the globe. Hence the global networks provide customers with the worldwide services. For example, the use of credits cards while abroad.

Telecommunication companies (Telco's) focus on Customers retention and Revenue Growth: With the increasing number of wireless subscribers as well as high urban teledensity, the Average Revenues Per User (ARPU) is on the decline. In fact, competition is leading to further pressure on ARPUS (TRAI 2010; Ketkar et al 2012). Given that most of the services areas have several mobile networks operators with subscribers frequently switching from one provider to another and attendants rising churn rates, the network operators continuously look out for new services. This is meant to enhance their revenues and improve their customers' retention (Ketkar et al 2012). Mobile money services delivery has been identified as a strategy by some telecommunication companies to bring down churn rate (Wishart 2006). This helps to increase their customer retention rate. The idea is that if mobile money is deemed important by a subscriber, then the provision of such services by the telecom operator would discourage him/her from switching to other providers (Wishart 2006, Erwin 2010).

Reach of telecom distribution network: The vast network of consumer touch points of Telcos can facilitate mobile banking. In most developing countries, millions of retail outlets spreading across the countries both in the organized and unorganized sectors are said to be associated with the telecom sector (Ketkar et al. 2012). All these outlets either stock-and - sell the physical recharges vouchers or do recharges by electronic transfer of talk-time to subscribers. This reach by telecom outlets is much wider than the coverage achieved by formal banking systems in these countries (Ketkar et al 2012). Network operators continually make efforts to expand their network coverage by focusing on the rural areas. As such, providing banking/ financial services through this medium might have a great capacity for financial inclusion and hence present an opportunity for entrepreneurial mobile banking..

The need for increased efficiency and lower cost: Banks have experienced that the deployment of technology has lowered their overhead, thus they have been encouraging consumers to use electronic channels such as ATMS, mobile banking and internet banking (Ketkar et al. 2012). Since opening bank branches involve huge investment in infrastructures, equipment, human resources and security (Nir and Acharya 2012), mobile banking could be

preferable in emerging markets. This is so because mobile banking leverages local resources, infrastructure, skills and equipment. Mobile banking by virtue of its affiliation to other sectors (e.g. telecom, banking, and support) is expected to witness series of co-promotion efforts from all providers. The expected promotion could open wide entrepreneurial opportunities for media houses. It should be cheaper for financial institutions to relate with their clients via mobile phones than traditional advertising media such as television and newspapers.

High Penetration of Mobile Phones: The rapid diffusion of mobile phones in developing countries provides an avenue to offer financial services to the poor. According to the international telecommunication union, mobile phone penetration reached 79 percent in the developing world in 2011 and it is projected that by 2015, more people in Africa would have access to mobile phones than electricity (Nir and Acharya 2012). Many of these phone users live in informal cash economies. A current study indicated that about 90% of people living in developing countries have no access to financial services from financial institutions either for credit or saving (Robert, 2010).

Security of transactions: One common negative influencer of mobile banking which was identified by most of the mobile banking literature reviewed is that of the security issues (Ketkar et al 2012, Nir and Acharya 2012, Erwin 2012, Agwu 2012). Perceived risk relating to inherent uncertainty of innovation can be social, functional, economic or physical (Laukkanen et al. 2007). But, in case of mobile banking, it is that of security of transactions (Ketkar et al. 2012). Uncertainty about security and privacy could hinder consumers from adopting and using mobile phones for financial transactions. This could even be worsened by low level of education. This problem is critical in the emerging market economies where cybercrime-related legal framework and enforcement mechanisms are under developed. .

Conservative and Vague regulation: Mobile banking related regulatory systems are evolving slower compared to technological developments in the developing countries (Nir and Acharya 2012). In some cases there are no clear regulatory guidelines. In other countries, central banks have regulation supporting the role of retail banks as key players in mobile banking value chain. Similar to conventional banking, mobile banking is subject to “know your customers” (KYC), Anti money laundering (AML), combating the financing of terrorism (CFT) and other regulatory guidelines. Such regulations make mobile policy making both conservative and restrictive, thereby hindering its growth. Reaching out the unbanked requires transformational mobile banking model. Therefore, there is a need for coordinated efforts at policy making level (CGAP, 2008). According to Azad (2008), mobile banking needs to be supported by what he calls “a proportionate risk-based regulation” which implies that the policy is open to a certain level of risks in favor of the larger objective of improving financial inclusion.

Under developed infrastructures: The current nature of mobile banking occurred in an under developed ecosystem characterized by poor infrastructures, immature standards, substandard mobile phone features, overloading and network congestion and outages (Nir and Acharya 2012). In addition, some telecom services providers in the rural areas are defaulting on their service norms. Thus, even in an event that mobile banking finds acceptance, the poor reach

and reliability of telecom services in rural areas would be an obstacle to mobile banking (Nir and Acharya 2012). Mobile banking would require excellent customer services delivery in order to earn trust. Here, trust is seen as the extent to which customers believe in the system. It appears to be one important factor that reduces perceived risk but lack of it could become a major hindrance to the acceptance of any service (Manzano et.al, 2009).

Interoperability issues: Mobile banking involves integration of diverse complex systems. These include the diverse systems of Telcos, various technology platforms of vendors, wide range of mobile phones and variations in banking systems. It would be vital that all the systems work well together to deliver quality services to users (Ketkar 2012; wyk 2008). If not, heterogeneous interest of stakeholders, lack of technology standards and technology stability issues may stand as an obstacles to entrepreneurial mobile banking (Ketkar et al. 2012). Also lack of collaborations among the players in the mobile banking value chain could create a roadblock to mobile banking diffusion (Nir and Acharya 2012; Mugweru et al. 2011). The underlying problem to this was that traditional banks lack proper tools to deal with mobile banking. For mobile banking to succeed, collaboration between the banks and mobile operators are imperative and convergence of payments and mobile communication is inevitable (wyk, 2008). There is also a need ensure to interoperability at agencies level.

Business models issues: Similar to the interoperability challenge, the business model issues have to be addressed as they relate to customers acquisition and ownership, revenues sharing and costs related issues (Cranfield and Rylander 2006). Mobile banking is more than just providing access to the unbanked population of the society but involves creating value for all parties (Wyk 2008). Creating a functional mobile money model can be a complex phenomenon, especially in countries where there are multi networks, calling for collaboration from two different domains, telephony and banking, as well as for partnerships with variety of players (DHL 2012, Stanbic IBTC 2012).

Lack of basic needs for banking/financial services: The fact that most of the poor in the developing countries live under less than USD2 a day poses a challenge for mobile banking. Some issues include: problems of geographical location, lack of suitable products, poor financial literacy and alienation from banks, and lack of steady and substantial source of income (BCG 2007). This situation is prevalent in many developing countries and suggests that lack of need for banking services would be a major barrier to banking as well as mobile banking. Therefore, to create need for banking and of course mobile banking, aggressive microfinance, government program for rural employment generation and efficient targeting of subsidies would be necessary (Van Hove 1999; Ragarajan 2008; Ketkar et al 2012).

2.4. The Conceptual Model

The conceptual model examined in this study is shown in figure 1. It was developed based on extensive review of existing mobile banking and entrepreneurship literatures. It incorporates the dimension measured to describe entrepreneurial mobile banking as well as the facilitators and obstacles to entrepreneurial mobile banking. The dimensions measured to describe entrepreneurial mobile banking highlighted the sources of mobile banking

entrepreneurial opportunities. The key variables measured include technological, socio-demographic, regulatory/institutional, and economics changes. These macro environmental factors create different entrepreneurial opportunities for mobile banking. Within each of these variables are specific facilitators or obstacles to entrepreneurial mobile banking.

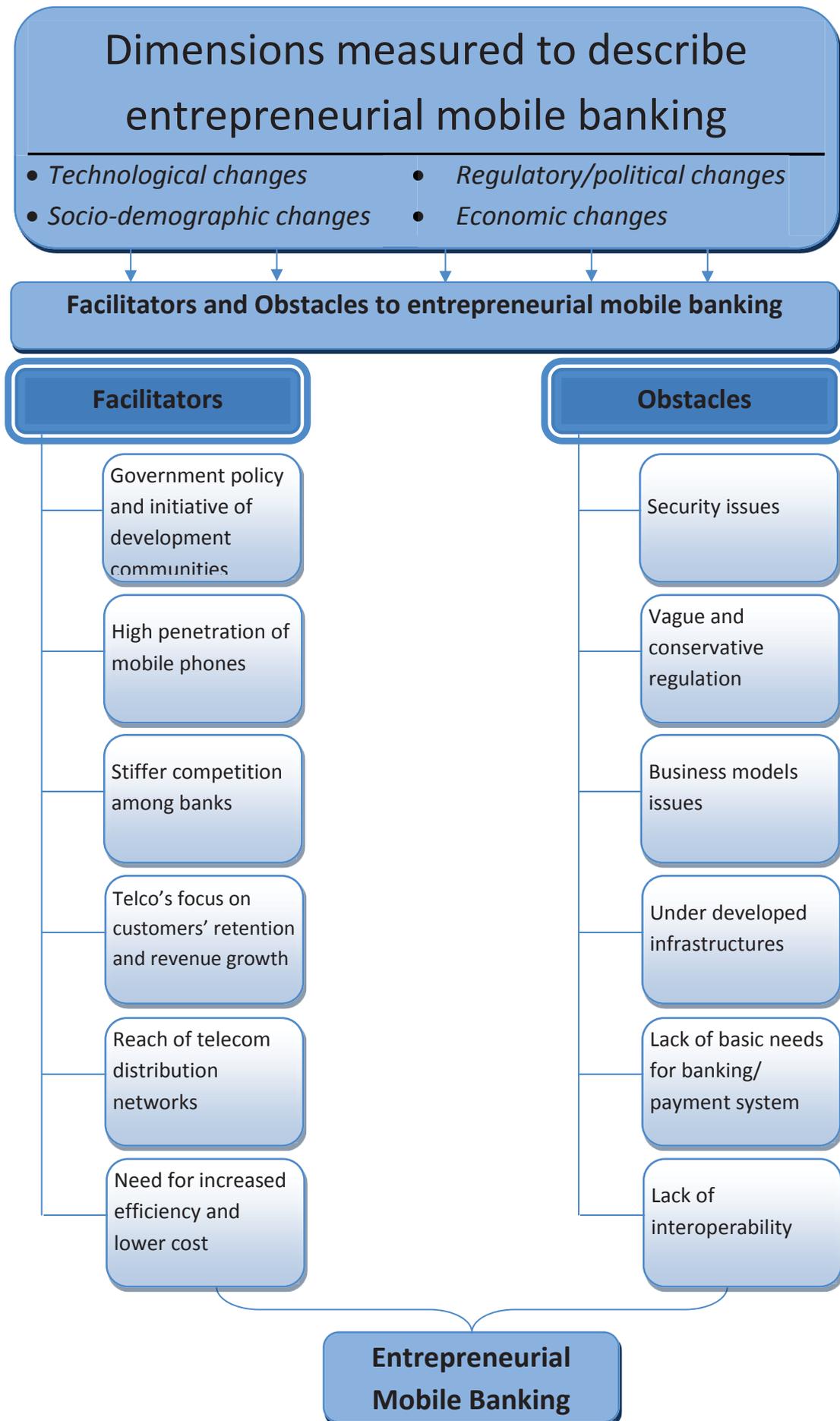
Technological changes have long been identified as a major source of entrepreneurial opportunities and mobile banking is not an exception (Shane 2003). Today, the banking industry in particular and the payment industry in general are experiencing a convergence of technologies and payment processes (Wyk 2008). This indeed necessitates the integration of the payment systems. Since mobile devices are seen as key enabler of secure and convenient means of payment, it presents an opportunity for entrepreneurs. Similarly, the diffusion of mobile phones among the previously unbanked population in the developing countries coupled with its acceptance as a payment channel also create an opportunity for entrepreneurial mobile banking.

Another important dimension measured to describe entrepreneurial mobile banking is that of regulatory / institutional changes. The regulatory regime in many developing countries is characterized by the commitment to diversifying their economies from cash based to cash lite. This, in addition to the institutional frameworks for the financial inclusion of the unbanked poor – who currently have access to more mobile phones than banked accounts – presents a number of opportunities for mobile banking. The institutional frameworks in most of the developing countries signal a passion and commitment to mobile banking and many countries have taken affirmative actions towards achieving this objective e.g. Nigeria, Kenya, South Africa, India and Philippines, among others. This was based on the assumption that mobile banking has the capacity to facilitate financial inclusion and hence enable the unbanked poor to benefit from financial services due to high penetration rate of mobile phones among this segment of the society.

The economic conditions of the developing countries is dominated by cash and hence the attempt by both the international development partners, the government as well as the Non-governmental organizations to diversify to cash lite economies, was also another dimension that was measured to describe entrepreneurial mobile banking. Secondly, the economies of these countries are growing fast thereby creating needs for financial services among the previously unbanked population .They also have a burgeoning middle class which means that they have greater financial capacity to purchase the modern phones that have more features for mobile banking.

All these dimensions interact together to create opportunities for mobile banking.

Figure 1
The Research Model



3. Method

Overview

This chapter provides an overview of the research method and design used in this study to identify the facilitators and obstacles to entrepreneurial mobile banking. For the purpose of the study, qualitative (exploratory) research was used as it is believed that it would help the author gain a better understanding of the complexity of the research problem, improve the understanding of the phenomenon of mobile banking facilitators and obstacles, as well as investigate these factors in a new light. The primary research method that was used focused on a country (Nigeria) as a single case study. Nigeria is a West African country bordering the Gulf of Guinea between Benin and Cameroon on the South and between Chad and Niger on the North.

Case study is often associated with descriptive or exploratory research. In business studies, case study research is quite useful when the phenomenon under investigation cannot be studied outside its natural setting, and also when the concepts and variables under study are difficult to quantify (Ghauri and Grønhaug 2010). Case studies are also important to study a situation which has rarely been studied and is unique in its nature with the hope to learn something new and important (Yin 1994).

Other strategies according to Creswell (2009 p.14) include:

- *“Ethnography is where the researcher studies an intact cultural group in a natural setting over a prolonged period by collecting primarily observation data”*. This kind of research depends on the responses received based on the peculiar circumstances. The outcome is unknown at the onset. It involves collecting data at various stages, modifying and finding connections of the information. The features include comparing data with evolving categories and sampling of various groups to exploit their common and differing features.
- Phenomenological research is *“where the researcher identifies the “essence” of human experiences concerning a phenomenon”*. This involves an extensive study of several subjects over a long period of time in order to understand their relationship and form a theory.
- Narrative research is *“a form of inquiry in which the researcher studies the lives of individual and asks one or more individuals to provide stories about their lives.”* The researchers retell the story into a narrative chronology and the result reflects the views of both the researchers and the participants.

All these strategies are unlike the case study that is time and activity bound. This appears to show that other strategies do not fit-in well. For example, ethnography would require a prolonged time period, phenomenology is applicable when attempting to identify human experiences about an idea or phenomenon which also involved a prolonged time period, narrative is inquiry into individuals' stories and grounded theory involved the derivation of theory.

The research technique adopted was semi-structured interview within the single case study with financial sectors expert as well as academic expert in the field of mobile banking. Mobile banking is a new innovation in Nigeria and both Government and donor agencies are trying to find out how to use this innovation to deepen financial inclusion.

3.1. Qualitative case study to describe the facilitators and obstacles to entrepreneurial mobile banking (Research process)

3.1.1 The Theoretical Process

The research process of this thesis began with a real live challenge relating to entrepreneurial mobile banking in the developing countries. It was also inspired by the fact that the author had worked in the banking sector for about nine years in a developing country. The theoretical study revealed that despite the acceptance of mobile banking among scholars as a veritable tool for financial inclusion in the developing countries, entrepreneurial mobile banking growth have been quite slow at the pace of technological innovations except in Kenya. Hence the interest to carry out an in-depth study with a view to finding out the link between the current literature and the challenge faced by the entrepreneurs.

The entire theoretical process was then structured after Maxwell (2005) research model which consists of five components; Goals, Conceptual Framework, Research question, Method and Validity. These components demonstrate the iterative process that took place during the study.

Research Question: The research question was formed after the problem discussion and formulation to identify which are the facilitators and obstacles to entrepreneurial mobile banking. This question formed the core of the entire study as the objective of the study was to identify ways through which the growth of mobile banking in developing countries could be accelerated.

Conceptual Model: In this component of the iterative model, existing model of mobile banking were examined to gain an understanding of what is happening in this sector. But the author discovered that the existing model cannot provide the necessary information that is needed to fully understand what was happening in the context of the Case. Hence a new research model was developed in the context of conceptual model upon which further analysis was based. It was developed based on review of existing mobile banking and entrepreneurship literature.

It incorporates the dimension measured to describe entrepreneurial mobile banking as well as the facilitators and obstacles to entrepreneurial mobile banking. The dimensions measured to describe entrepreneurial mobile banking highlighted the sources of mobile banking entrepreneurial opportunities. The key variables measured include technological, socio-demographic, regulatory/institutional, and economics changes. These macro environmental factors create different entrepreneurial opportunities for mobile banking and within each of these variables are specific facilitators or obstacles to entrepreneurial mobile banking.

Method: This highlights the actual method used in the study. Specifically, they included a combination of qualitative methods, semi-structured interviews, literature review and case study.

Validity: To ensure the quality of this research, the findings from the responses were subjected to structural corroboration. Structural corroboration is where the researcher relates multiple types of data to support or contradict the interpretation (Eisner 1991). In other words, the findings were triangulated. In addition to the fact that it helped to determine the validity of the study, it also helped to harmonize complementary sources of data. With specific references to case studies, a key measure of validity and reliability is triangulation. Triangulation is defined as the combination of different methodologies in the study of the same phenomenon (Ghauri and Grønhaug 2010). Triangulation helps to improve the accuracy of judgments and thereby results. It can be achieved either by collecting data through different methods or by collecting different kinds of data on the subject matter of the study. This is particularly important where correctness and precision is the focus.

3.1.2 The Empirical Process

The empirical process undertaken in this study consisted of three phases: The first phase was the review of the existing literature on mobile banking and entrepreneurship in order to gain an understanding their theory and to potentially identify factors influencing entrepreneurial mobile banking. This gave the author a better opportunity to understand the concepts and then narrow it down to specific details that are relevant to this study. The existing literature revealed a number of definitions and conceptions of mobile banking and entrepreneurship. However, an alternative could have been the collection of primary data from entrepreneurs with a view to understanding their challenges in respect of entrepreneurial mobile banking. But such approach would have been cumbersome given that a larger number of entrepreneurs would have to be sampled in order to get a true representation of the current challenges.

The second phase was the exploration of the case (Nigeria) through semi-structured interview which was conducted with a number of experts in the financial sector who are familiar with mobile banking. It also involved scholars whose work on mobile banking has been published in peer reviewed articles. The third phase was the analysis of data and interpretation process. This phase included the review of literature on other experts' opinion particularly from the financial sector and those working directly with mobile banking deployment in developing countries as well as the Central bank of Nigeria.

3.2 Research Population and Sample

The research sample for this study consisted of three researchers, four mobile money experts, three financial analysts, four bankers and two telecommunication experts. Some of the interviewees indicated their interest to keep their identity distinct while others prefer their identity as anonymous. For uniformity, the identities of all the participants are hereby kept anonymous to protect the interest of those who would not want their identities publish.

The researchers consisted of one professor of Economics whose research interest focus

on financial market and derivatives, a doctorate degree holder in Marketing with academic research interest and publications on adoption of network technologies in financial industries. The other is a doctorate degree holder in computer sciences with research interest in networks security and system configuration for financial services. The mobile money experts all work in the mobile banking sector and hold strategic positions in their respective organizations. One of these worked as a brand manager in one of the leading mobile money operators in Abuja, Nigeria while the others worked in Lagos, Nigeria. The financial analysts consisted of two columnists with a leading weekly business newspaper and one participant who provide support services to mobile money operators in Nigeria. The four bankers worked in different banks in Lagos and they are all part of the management staff in their respective banks. The telecommunication experts worked in one of the telecommunication companies in Lagos, Nigeria and have been actively involved in the development and deployment of mobile banking services product in the company. The list of the sample group can be found in Appendix A.

3.3 Data Collection

The author's purpose with the data collection was to study the subject in a logical manner. The author started out by determining what data was required for the empirical study. After this careful analysis, three basic methods of data collection - namely, document analysis, interview and archival records - were adopted. This process involved narrowing the description of the concepts of mobile banking and entrepreneurship; developing the interview process and questions; identifying the target participants or respondents; briefing them of the processes; and conducting the actual interview. An interview guide including the interview questions was developed. It was first sent to the interviewees to acquaint them with the interview questions and then followed by telephone interviews. The interviews were tape-recorded with the consent of the interviewees. The responses were then transcribed.

The data from the interviews were triangulated with secondary data. These secondary data were obtained from the archival documents and documents analysis gotten from the existing literature. The author also reviewed publications from the mobile telecom operators, the banks, the regulatory authorities and international development organizations such as: the United Nations Conference on Trade and Development (UNCTAD); industry specific association such as the International Telecommunication Union (ITU); special foundations such as the Consultative Group for the Poor (CGAP) among others. The importance of this triangulation was to gain a good understanding of the research theory (Denzin and Lincoln 2000). Christensen (2006) stated that triangulation involves getting similar knowledge from others sources to verify the validity of the collected data or making use of a number of cross checked sources and methodologies so as to avoid misleading outcomes.

The starting point of any data collection process is dependent upon an overall judgment on which type of data is needed for a particular research problem (Ghauri and Grönhaug 2010). The data collection steps are as follows: setting the boundaries for the study, collecting information by means of unstructured or semi structured observations and interviews, visual materials documents as well as establishing the protocol for recording the information (Creswell 2007, p.185). There are various sources from which data can be gathered for cases studies. Yin

(2003) stated that six sources could be used including interviews, documents, physical artifact, archival records, direct observations and participants-observation.

The author chose the data sources as mentioned above because, physical artifact, direct observations and participants –observations do not present the potentials for the needed data for this study. And where they do, they appear prohibitively expensive and require a prolong time period.

3.3.1 Semi structured interview

The initial interview process began with the sending out of the interview guide and the questions to the participants. Then an appointment was booked with the different participants for different days. This was followed by preliminary and exploratory interviews with the participants thereby giving the author the opportunity to understand their views and thereafter made more enquiries which provided some data for analyses and triangulation. The entire interview was conducted between July, 2013 and January, 2014. Each of the interview sessions lasted for about one hour. This was possible because the interviewees already familiarized themselves with the interview questions since it was sent out in advance. This helped in two ways: firstly it saved time and waste of effort since much effort was not required in explaining the questions and secondly, it prevented the risk of asking leading questions in an attempt to explain the questions. Thereafter, the recorded responses were transcribed.

3.3.2 Study of other Archival Documents

The author explored other sources of data in this study. These included the study of archival documents, documented analysis from the existing literature, as well as publications from the mobile telecom operators, the banks, the regulatory authorities and international development organizations as described earlier.

3.4 Data Analysis Methods

The data analysis was specifically carried out with the main objective of extracting findings from the collected data during the research process. Another objective was to identify the relationship between the conceptual model described earlier and the various factors identified in the context of the case. To ensure a systematic analysis of the data, the research model was used to do a more thorough analysis. The author started out with the data analysis by preparing and organizing the data and then reducing the data into themes by means of coding and condensing the codes. Thereafter the author proceeded on how the description and themes will be represented in the qualitative narrative, and finally making meaning of the data.

Yin (2003) suggested that research involving a case study analysis could be done in three strategic ways: theoretical propositions, rival explanations and descriptive frameworks. He stated further that these strategies help in fair treatment of evidences, convincing analytic conclusions and elimination of alternative interpretations. The absence of such strategies might leave the writer with the option of using the data initially before going ahead to form a systematic sense of what should be analyzed and what should not. According to Yin (2003), the strategy of relying on theoretical propositions is based on the assumptions that the researcher had propositions prior

to the research. This has an advantage of serving as a guide in data gathering but also has the disadvantages of limiting the findings. Rival explanation is close to that of theoretical propositions, the difference being that the latter involve the formulation of counter propositions. The third strategy as identified descriptive framework by Yin, which was the strategy chosen in this study involves developing a case descriptive framework for organizing the case study thereby establishing a fixed unit of analysis and causal links to be analyzed. This strategy was chosen because it is in alignment with the research model which formed the bedrock of data collection.

In addition to this strategy, the author choose the explanation building technique which Creswell (2009) simply referred as direct interpretation. This technique involves looking at a single instance and drawing meaning from it without looking for multiple instances. Other techniques include pattern matching, time-series, and logic models and cross-cases synthesis (Yin 2003). Direct interpretation technique was chosen because it suite the objective of this studies. For instance, Pattern matching according to Yin involves comparison of an empirical based pattern with one that is predicted. Cross-cases technique is best suited for multiple case studies and time-series is applicable when studying variables over a period of time.

3.5 Qualitative Data Analysis Process

This section highlights the entire stages of the data analysis process. The process began with the transcribing of the interviews through editing to direct interpretation.

Editing: In order to ensure the quality of the data, the interview was edited through the inspection of all the data collected during the interview. The aim of this process was to bring to the barest minimum the possibility of conflicting information that would affect the overall result. In the process certain points of potential relevance that need further clarifications or explanation were discovered. This was addressed by additional follow-up phone interview with the interview participants who provided the data.

Data Reduction: At this stage of the analysis, the transcribed interviews were revised and all relevant information was extracted based on the research question. The author focused exclusively on identifying the facilitators and obstacles to entrepreneurial mobile banking. This stage in a nutshell involves: analytical steps, categorization, coding, comparison, and integration (Ghauri and Gronhaug, 2010, 204).

Categorization and Coding: At this stage, the author identified some categories in which the responses could be placed; then organized the categories simply as facilitators and obstacles and there after use the model to identify specific information that was captured in relation to any of the identified factors in the reviewed literature.

Triangulation/Structural Collaboration: The data obtained from the structured interviews were subjected to structural corroboration. Structural corroboration is where the researcher relates multiple types of data to support or contradict the interpretation (Eisner 1991). This was done by comparing the responses from the interview with existing literature, experts' opinion in the sector, as well as publications by the Central Bank of Nigeria. In other words, the findings were triangulated and this in addition to the fact that it helped to determine the validity

of the study also help to harmonize complementary sources of data.

Data Interpretation: The author chose the explanation building technique which Creswell (2009) referred as direct interpretation. This technique involves looking at a single instance and draws meaning from it without looking for multiple instances. Other techniques include pattern matching, time-series, and logic models and cross-cases synthesis (Yin 2003).

3.6 Quality of Research (Validity and Reliability)

To ensure the quality of this research, the findings from the responses were subjected to structural corroboration. Structural corroboration is where the researcher relates multiple types of data to support or contradict the interpretation (Eisner 1991). In other words, the findings were triangulated and this in addition to the fact that it help to determine the validity of the study also help to harmonize complementary sources of data. The objective here was to help improve the accuracy of judgments and thereby results. Another reason was to produce a holistic, more complete and contextual portrait of the object under study. It also helped to check for method bias and consistencies as well as enhances our confidence in the analysis and results and therefore the validity and reliability of results.

This is in alignment with, Yin (2003) and Creswell (2009) both suggesting that use of many sources, explication of chains of evidences and the ratification of transcripts of interviews by respondents could enhance validity.

3.7 Methodological Limitations

It is useful to state here that a number of limitations were evident in the research method. First given the time constraints and the potential respondents'/participants' busy schedules, the sample of the interview was quite small and thus restricted the author from extracting widely applicable empirical findings. Quite a lot of mails were sent out soliciting for interviews appointment and follow-up calls were made to the respective organizations but only very few obliged and managed to book appointment while many did not even respond to the mails. Among those that managed to book appointment with the author, some did not pick their calls at the appointed time.

Another limitation was that the quality of the answers was dependent on the questions. Thus, wrong questions have the potentials to compromise the validity of the findings. Finally, there was the risk of misinterpretation of the responses.

4. Case Description (Nigeria)

4.1 Political History

Nigeria is a West African country bordering the gulf of Guinea between Benin and Cameroun on the South and between Chad and Niger on the North. She got her independence from Great Britain on October 1, 1960 and declared a republic on October 1, 1963. It consists of 36 States, the Federal capital and 774 Local Government Areas. Her Administrative Capital was officially transferred from Lagos to Abuja on December 12, 1991 and since then Lagos has only been regarded as the commercial capital. Nigeria is one of the most populous country in Africa with a total population of 167 million people (2012 estimate), land area of 923,768 sq. km (356,669 miles) and a population density of 82.2 per km (Agwu 2012).

The population is made up of 50% Muslims, 40% Christians and 10 Indigenous beliefs (Agwu 2012). Also the population consists of 69% Literate with 68% living in the rural area and 32% in the urban area as well as an annual population growth rate of 4.8 % (Agwu 2012). She has a heterogeneous ethnic of about 250 different languages with Hausa (Fulani) dominating the North and Yoruba and Igbo (Ibo) dominating the South. The official Language is English and though effort has been made to adopt any of the three major languages, it has not yielded much result. The monetary unit is Naira and Kobo.

Nigeria has a federal constitution and a presidential system of Government modeled after the American system where the President is both the Head of State and Head of Government. The Federal Constitution allows for three tiers of Government: Federal, State and Local Government. Each of these tiers is autonomous in principle but in practice they are not.

4.2 Economic History

According to World Bank report (2012), Nigeria is rich in mineral deposits including Coals, Petroleum, Iron Ore, and Tin. The country is also rich in Agricultural produce such as Groundnuts pyramids in the North, Cocoa plantation in the West, oil palm produce in the East (Agwu 2012). In addition to these resources, Nigeria also has healthy rivers full of fishes and other aquatic animals. Nigeria is ranked as one of the major exporters of petroleum products (World Bank report 2012). However, despite these enormous mineral resources, researchers pointed out that the Nigerian State has not been in the best of shapes (Agwu 2012; Ezeoha 2005).

Agriculture was the mainstay of the Nigerian economy before the discovery of oil in commercial quantity in the mid '70s. Today, the Nigerian economy can best be described as mono-cultural economy (Oil). In other words, while Nigeria can boast of several minerals deposits in virtually all the states of the federation with vast arable farming land, for years, concentration has been on Oil (Central Bank of Nigeria 2009; 2010) thereby neglecting other sectors of the economy that would have complemented the oil exploration for the good of all. Up till now, the majority of the Nigerian population lives below the poverty line – GDP per capita USD2.199 (UNICEF 2010).

4.3 The Nigerian Telecom sector

Before the Administration of President Olusegun Obasanjo, which deregulated the telecommunication sector in 1999, telephone services were only at the reach of the affluent. The sector was monopolized by the only national provider: Nigeria Telecommunication Limited (NITEL). The deregulation of this sector led to the emergence of mobile phones in Nigeria and this was applauded to be one of the most significant achievements of the Obasanjo-led administration (Mbarika et al. 2005). Since then, there has been a dramatic growth of over 4000 percent increase from a mobile penetration rate of approximately 13 mobile subscribers per 1,000 inhabitants in 2002 to 586 mobile subscribers per 1,000 in 2011 International Communication Union (ICU 2011). Recent report from the Nigerian Communication Commission as at March 2013, noted that the current mobile subscribers in Nigeria stood at 117,281,669 translating into a teledensity rate of 84% (Nigerian Communication Commission 2013). Teledensity is the number of telephone connection for every hundred individuals within an area.

Currently, there are four major telecom operators in Nigeria. According to Nigerian communication commission industry data for March, 2013 the market share of each of these operator indicated that MTN has a total Subscriber of 51,294,654 (45%), Globalcom (23,833,796) (21%), Airtel (23,670,986) (21%) and Etisalat (15,114,484) (15%). Similarly, within the same period, Nigeria has a total active GSM internet subscriber' of 34,471,520 (97.35) and active CDMA subscribers of 152,870 (2.65%) consisting of 2.31% of mobile CDMA and 0.34% of fixed Wired and wireless CDMA. The breakdown of the active internet GSM subscribers indicated that MTN Nigeria has (22,725,089), Globacom (659,671), Airtel (6,154,572) and Etisalat (4,932,188). On the other hand, the breakdown of the active CDMA subscriptions, revealed the following: Visafone Nigeria (92,400), Multilink Nigeria (23,572) and Starcomms Nigeria (36,898).

Besides the fact that majority of the banks provides mobile banking services, each of these operators, also has one form of mobile banking services or the other. For instance, in 2006, Glo-mobile reported that there were 200,000 hits on Glo m-Banking services daily (Fereday and Muir-couthrane 2006). Zain (now called Airtel) has a mobile banking service called Zap that provide services such as bill payments, funds transfer, bank account management, cash withdrawal and airtime top up (Omolola and Cloete 2011). MTN Nigeria selected Fundamo-a provider of mobile application to provide mobile banking services to users in the country (Opara 2009). In regard to the contribution of the Telecom sector to the Nigerian Gross Domestic Product (GDP), the figure as at March 2013 indicated a leap from a 0.62% in 2001 to 8.53%.

However, despite the high rate of mobile penetration in Nigeria, the solid foundation required for the introduction of such innovation was nonexistent (Agwu 2012). Information Communication Technology (ICT) was not in the curriculum of most schools and colleges particularly the public schools and in places where they were, the teaching of ICT was more theoretical than practical. Thus, the usage of computers does not only become a tall order but also the cost and maintenance is beyond the majority of the population (Durkin et al 2008). According to Akinsoye-Gbonda and Gbadeyan (2011), at a point, the supply was more than demand due to lack of knowledge on its usage. Compounding this problem was the issue of

electricity with which to charge these devices. During the early years of mobile phones introduction in Nigeria, many were not persuaded to purchase these devices because of the epileptic nature of power supply (Eze 2009; Ezeoha 2005; Agwu 2012). The epileptic nature of electricity supply therefore forced many corporate organizations including government agencies as well as individuals to power their businesses with Generators. The nation spends about N1.95 trillion (\$13million) on generators sets annually (Bamodu 2005). Thus many see the purchase of computers and its accessories as a futile investment since they would not be able to use the technologies given the current level of electricity supply among other factors.

4.4 Why is this Case Important for this Study

Being the largest country in Africa, Nigeria presents a huge opportunity for entrepreneurial mobile banking. The country has high rate of mobile phones penetration (117 million mobile phones subscribers) and yet a low saturation level of mobile banking. Also, the current cash nature of the Nigerian economy and the effort of the regulatory authority (The Central Bank of Nigeria) in encouraging electronic transactions through several regulatory guidelines, make this country a good case for this study.

The ability to pay for goods and services through other means other than cash and cards has universal appeal. In Africa and Nigeria in particular, it is being driven by the need to reduce the risk of theft. In this case the mobile banking is ideal because it is cheap, ubiquitous, can authenticate parties, and can record transactions. Thus, mobile banking will play major roles in sustainable development in Nigeria. In addition, in a country where electricity and transportation are unreliable, mobile banking could act as a catalyst for change and not just that but can address one of the biggest problems in the value chain – cost.

Moreover, Nigerian financial industry players seek modern technologies and high standards but slow progress is being made towards achieving these especially regarding mobile banking. Therefore, using Nigeria as a case presents some opportunity for generalization given the fact that the Nigeria's economic condition is somewhat similar to those of other developing countries.

5. Data Analysis

This chapter presents the analysis of data organized in two sections. The entire analysis is based on the Case/ theory.

- The Facilitators of Entrepreneurial mobile banking
- The obstacles to entrepreneurial mobile banking

5.1 Facilitators of Entrepreneurial Mobile Banking

All the respondents were asked to identify the facilitators as well as the opportunities for entrepreneurial mobile banking in Nigeria. The identified facilitators and opportunities were categorized according to the pattern identified in the literature review and represented by the research model.

Government policy and the initiatives of the development communities: All the respondents shared the opinion that the effort of the Central Bank of Nigeria to extend banking services to a wider segment of the Nigerian public – and consequently the identification of mobile telephony as a veritable avenue for advancing financial inclusion – is one of the main facilitators of entrepreneurial mobile banking in Nigeria. The scope of the regulatory framework addresses business rules governing the operation of mobile payment services in Nigeria (CBN 2009). It specifies basic functionalities expected of any mobile payment service in Nigeria. In addition, it sets the basis for regulation of mobile payments services offered at different levels and by diverse participants.

“...the government in recent years has shown a will to drive electronic payment in Nigeria and they have identified mobile banking as one of the most appropriate ways given the penetration of mobile phones in Nigeria” – Participant 5, 2013.

“...the Central Bank appears to be more committed to electronic payment systems and in particular mobile payments in recent years than ever before and most of her guidelines is aimed at providing a conducive environment for mobile payments services, in reducing cash dominance in the Nigerian economy”- Participant 1, 2014.

The findings also revealed that a number of development agencies are active in Nigeria in their effort to help alleviate poverty. The Department For International Development (DFID) has partnered with Enhancing & Financial Innovation Access (EFInA) a financial sector development organization that promote financial inclusion in Nigeria as the primary vehicle for activities in retail banking. The International Financial Corporation (IFC) is committed to Financial Inclusion through its advisory arm (Access to Finance) as well as to long-term financing to improve its reach to SMEs and underserved segments. German Society for International Cooperation (GIZ) intends to assist the financial services strategy (FSS 2020) in providing training and awareness so as to build human capacity, enhance consumer protection and financial literacy (CBN 2012: p.11)

Participant 2 averred:

“...the supports of the international donor agencies in particular are very evident in this move by the Central Bank of Nigeria. And I learnt some do not only provide the grants support but are also involved in capacity building” Participant 2, 2014.

In international forums like the Group of Twenty (G-20) mobile banking has move up the reform agenda and at national levels. About two-thirds of supervisory and regulatory agencies are charged with enhancing financial inclusion with some fifty countries already setting targets and goals for financial inclusion including Nigeria (World Bank 2014). The evidences highlight that Government policies and the effort of the international donor agencies are indeed one of the main facilitators of mobile banking in Nigeria.

Stiffer Competition among Banks:

“...mobile banking is the current trend across the globe and particularly in the developing countries. It is believed to be the next generation of banking and banks cannot afford to lag behind in this innovation. It is principally driven by competition among banks and we believe that this competition will continue to increase in the foreseeable future”- Participant 5, 2013.

“... banks are afraid that if they do not offer mobile banking and their competitors do, they may lose their customers- Participant 9, 2014.

All the participants reported that as a result of the previous bank consolidation, competition has stiffened and banks have been looking for ways to retain existing customers and acquire new ones. They pointed out that this will continue to drive investment in mobile banking technologies by banks (Participant 6, participant 8, participant 12, participant 13, 2014). Further, according to the rating firm - Standard and Poor's (S&P), Nigeria's banking sector has been largely transformed after the Central Bank of Nigeria (CBN) intervention. The subsequent reform reshaped the industry and increased competition (BusinessDay 2012). The changes imposed on Nigerian banking industry will have long-term effect on competition. According to Patrick (BusinessDay 2012), creditworthiness is expected to remain relatively stable over the next 12 months, given that AMCON (Asset management organization of Nigeria) has enabled failed banks to clean up their loan books. At the same time liquidity will be adequately strong across the banking sector since banks have large non-interest bearing deposits and hold high amounts of government or AMCON bonds. He stated further that there would be increased competition to lend to high-quality corporate customers and finance large infrastructure. The implication of this is that Banks will need to source for more means of delivering financial services to their customers in order to grow.

The Telecommunication companies' focus on Customers retention and Revenue Growth: Nigeria economy has witnessed an exponential increase in mobile subscription over the last few years. This increasing number of mobile subscribers appears to be decreasing Average Revenue per User (ARPU) partly due to intense competition (Ketkar at el.2012). As communications revenue growth weakens in the face of increased competition and saturation of the voice market, data traffic is expected to be an avenue for Telcos to shore up their ARPU

earnings (The Nation 2012). According to the report by the asset management and investment arm of the First Bank of Nigeria (Nigeria Intel 2013), Telcos are at a turning point in the evolution of their industry. In response, operators are moving away from the traditional structures into broad horizontal business models that cut across operators' boundaries.

"...It is good news that the number of mobile subscribers is on the increase in Nigeria but it also has its associated negative effect on the revenue of the telecom operators. More subscribers translate to lower revenue per user. My belief is that mobile network operators would seek for new means of revenue and I see it as one of the reason for their collaboration with the banks and other mobile money operators to offer mobile financial services." Participant 2, 2013.

The report predicts that the GSM operators will remain dominant and that operators would turn to increased value added services as a means of improving ARPU, given the moderation in subscriber growth. This would be mainly via data services provisioning. Additionally, as the Central Bank of Nigeria begins extensive implementation of the cashless economy initiative, mobile money is seen as one of the mechanisms operators would resort to in increasing their revenue base (The Nation 2012).

In Nigeria today, most of the services areas have several mobile networks operators with subscribers frequently switching from one provider to another. Therefore, network operators are continuously looking out for new services to enhance their revenues and improve their customers' retention. Although, the primary aim of network providers to offer mobile money can be seen more as a value added service, their interest to reduce churn rates has an indirect way of increasing their revenue (transaction fees, share of foreign exchange spread and sign-up fees) as well as increasing their customers loyalty.

..."one of the reasons why the network operators would continue to support mobile banking is the fear that they may lose their customers to others operators if their competitor offers mobile services and they do not. I see them entering into more collaboration with the banks, the independent mobile money services providers in order to acquire new customers and retain existing ones" - Participant 10, 2013.

The Reach of Telecom Networks: The unprecedented increase in mobile subscription in Nigeria also witnessed a similar increase in the number of customer service points. Similar to many developing countries, there are millions of retail outlets spread across the countries in both the organized and unorganized sectors. In particular, the Nigerian retail market is dominated by road side shops and kiosks having dealings with the telecom services providers even in the remotest villages. Most of these outlets either stock-and-sell the physical recharge vouchers or do recharges by electronic transfer of talk-time to subscribers (Participant 8, participant 10, participant 14, 2014).

"...The good thing about this mobile banking is that there is already a good network of recharge cards retailers that could be leveraged upon" - Participant 11, 2014.

“...another good factor is that given the number of recharge cards retailers that are present in most of the villages in Nigeria today, it is easier to conduct cash-in and cash-out even in the remotest villages”.- Participant 3, 2014.

It was also found that the network operators are making deliberate effort to expand their network coverage by focusing on the rural areas in their quest to increase revenue via customers’ acquisition. For instance, Etisalat Nigeria Ltd the fifth largest network operator in Nigeria says it has budgeted N30.6 billion (\$204m) for network expansion in 2012 (BusinessDay 2012). The reach of telecom network as an alternative channel for banks to delivering banking service to their customers also contributes to perceived usefulness and also presents an opportunity for mobile banking in Nigeria. It has the advantage of quick and unassisted access to account and instant update anytime anywhere via SMS and emails.

High Penetration of Mobile phones:

“...the most important factor that I believe is contributing and will continue to boost mobile banking in Africa and in particular Nigeria is the penetration of mobile phones - Participant 7, 2014.

“...if Nigeria can leverage on the number of mobile phones users, I believe they can achieve the cashless policy initiative much easier than the traditional bank - Participant 17, 2014.

Nigeria currently witnessed an unprecedented number of mobile phones subscribers and if proper utilize could contribute to her quest for financial inclusion of the poor (Participant 1, Participant 4, Participant 8 and Participant 14, 2014).

The need for increased efficiency and lower cost: The desire for banks in Nigeria to deliver financial services with greater efficiency to their numerous customers at minimum cost appears to be among reasons why banks opt for mobile banking (Participant 5, Participant 6, 2013). This quest is informed by the heightened competition as well as the need to deliver value to their stakeholders. In Nigeria, constructing a new bank branch cost an average of N50,000,000 (Burwood construction 2010) depending on the location. This cost excludes other costs such as the cost of the land, investment in infrastructure, equipment, human resources and security. In this regard, it was found that mobile banking is therefore appropriate for the emerging markets (Nir and Acharya 2012).

“...for the fact that the Banks are expected to deliver profit to their stakeholders and to be in business is enough for them to embrace this innovation called mobile banking” - Participant 1, 2014.

In addition, it was also found that with regard to the customers, the use of mobile for financial transactions saves cost of commuting to and from the Bank/ATM. Given that the cost of mobile is competitive, the total cost associated with every transaction is hence lowered. This was found to be true in both the rural and urban areas. In the urban area like Lagos, Abuja and Port Harcourt, the cost of transport is not only exorbitant but also the traffic situation is quite unbearable. Also, the cost of commuting in the rural areas is quite high as customers have to travel a long distance to the nearest bank branch or an ATM point to carry out their transactions.

Given the fact that the amount of most of the transactions involved is small, the cost can be greatly reduced if they are provided with the same services via their mobile phones.

5.2 Obstacles to entrepreneurial Mobile banking

Similar to what was done in the case of the facilitators of mobile banking; the participants were asked to identify the obstacles and threats to entrepreneurial mobile banking in Nigeria. These identified factors were also categorized according to the patterns identified in the literature and shown in the research model.

Security of Transactions: One key challenge facing entrepreneurial mobile banking in Nigeria is that of security of transactions. Security issues include cybercrime, loss of phones to underdeveloped anti-virus industry (Participant 2, 2013, participant 5 participant 7 and Participant 9, 2014). In Nigeria most mobile banking services are currently been delivered through WAP (Wireless Application Protocol) and SMS. WAP is used as a medium of communication between devices like digital mobile phones and personal digital device (PDA). Through this, customers should realize more functionality of mobile banking but the challenge is that the current encryption process being used to secure sensitive data is not good enough.

“...a major challenge that both the vendors supplying the mobile equipment, the mobile money operators and the telecommunication companies must address urgently if mobile banking is to thrive in Nigeria is the security of customers transactions” - Participant 3, 2013.

“... the current authentication method via personal identification number (PIN) cannot guarantee customers’ safety and it is a major challenge because, customers would not want to lose their money. If customers do not adopt mobile banking, how can you invest in it?” - Participant 4, 2014.

The case of cybercriminals targeting unsuspecting mobile payment users is a critical one. With regards to the anti-virus issues, more serious negative effects of mobile malware are likely to be felt in future since cybercriminals find ways to monetize mobile malware and increase the revenue per infection ratio for such malware.

“... another security challenge is that we have very poor anti-virus industry in addition to the fact that there is no legal framework to enforce breaches of customers rights”- Participant 3, 2013.

Cybercriminals pose a real threat to mobile banking in Nigeria given the loopholes in the current method of delivering mobile banking services. Other security issues identified by the Participants include the perception that the system is not ready for the move, poor financial education, lack of regulatory and law enforcement agencies, issues of identity thefts or scams that have been experienced in many developed nation, the fear of security breach that is expected in a cashless society and lack of technical and organizational capabilities in the financial institutions to govern security development. Yet other issues include lack of supporting policies to control costs and manage compliance (Participant 6, Participant 9, Participant 13, 2014).

Conservative and Vague Regulation: Although there was an indication that several

policy guidelines has been released by the Central bank of Nigeria in recent years to facilitate mobile banking services in Nigeria, a review of the terms of the regulatory framework appears to be restrictive and vague. For example the regulatory framework for mobile payments services in Nigeria (CBN 2009) identified three models for mobile banking services (bank focused, bank led, and non-bank led model) all of which excluded the mobile network operators:

“...mobile money is not getting traction in Nigeria and across West Africa...there are regulatory issues particularly amongst West African countries which have not allowed mobile money to grow as much as we would have liked it in the telecommunication space” – Participant 16, 2014.

The regulatory framework prohibited the telecommunication companies from providing mobile banking services in Nigeria. The reason given by the apex bank “the Central Bank of Nigeria” (CBN) was that it has no statutory power over them and as such cannot regulate their activities in that regard (allafrica 2013). Similarly, the framework (CBN 2010, 2013) subjects the banks to a number of regulatory requirements which have hitherto contributed to slow pace of mobile banking practices in Nigeria. Among these is the necessity to meet all requirements and standards for opening a regular bank account.

“... our regulation appear not supportive to boost the needed critical mass of users that can encourage more investment in this new innovation. The same reasons that have kept quite a number of Nigerians out of the banking sector are yet prevalent in the new regulation” - Participant 1, 2014.

“...there is a need for regulation to be proportionate to the risks. That is, regulation should be in such a way that it would not hinder useful innovation and experimentation but permits mobile banking to expand. Until then, investors would be scared to commit their money into the business” Participant 17, 2014.

The regulatory framework appears to be restrictive and vague. Therefore for mobile banking to be transformational and achieve the overall objective of financial inclusion, the mentality of CBN should change from being public focused to market-focused and evolve regulations on how the sector can best regulate itself. Achieving this would allow competition to be built among the industry players and hence more investment.

Underdeveloped infrastructures: The fact that the banks and other providers need the network operators to provide the infrastructure for their mobile banking services is significant. This is because the network operators also are currently experiencing infrastructural challenges. According to Clifford Brody, Founder and Chief Executive Officer of the Global Bankers Institute, the stability and quality of infrastructure is one of the obvious risks of mobile banking in Nigeria. The mobile network in Nigeria is characterized by overloading, congestion and outages.

...the telecom network in Nigeria is very poor. For instance, a lot of times, SMS from banks do not get to customers due to poor network and when you have an issue with some internet transactions, the banks seem to take their hands off. This is unlike in the UK where you are assured of getting

your money back no matter how long it takes” – Participant 2, 2013

“... I don't think that the 2,5G network currently used in Nigeria can support mobile banking effectively given that most of the transactions is done via SMS” - Participant 9, 2014.

Another infrastructural challenge is the resource to finance the needed platform.

“... a major infrastructural challenge facing mobile banking in Nigeria is that of resources to finance the platform. Mobile banking investments require adequate infrastructures as bedrock but currently these are lacking. The problem is complicated by lack of publicity which would have helped to educate private and other institutional investors in this sector” - Participant 4, 2013.

The problem of poor infrastructures is complicated by lack of electricity.

“... power supply is a major problem. No power to charge phones and no power for the agents to charges their devices, so how would mobile banking succeed? The use of generator sets would increase the cost to the agents as well as the customers” - Participant 5, 2014.

Mobile network in Nigeria, similar to many other low income countries, is still in the growth phase. However, the growth can be accelerated if customers have their basic devices working.

Interoperability among banks and the telecommunication companies: Interoperability is identified to be one of the major problems confronting the traction of mobile banking in Nigeria (Participant 2, Participant 3, 2013 and Participant 16, 2014). “*Traction in mobile payment in Nigeria is still very low. Interoperability remains a very serious issue. The likelihood of growth is clearly reduced*” (Businessday 2012,). “*Only four out of the 20 licensed mobile money operators are interoperable, as the industry is currently fragmented, with disparate mobile payment systems that don't talk to one another*” (Nigeria Intel 2013).

“...interoperability amongst disparate mobile money systems as well as poor agent networks is yet a drawback to entrepreneurial mobile banking” - Participant 6, 2014.

While misperceptions or mistakes in execution are considered barriers to the success of mobile money in developing countries, interoperability is the biggest barrier in Nigeria (Ciuci Consulting 2013). Providers could vastly improve upon the low growth of the mobile money industry by better understanding their customers and agents and investing more confidently and patiently in mobile money. Interoperability could be described as the possibility of the user of one mobile money service to send money directly to the wallet of another user on any other service. Professionals within mobile money services acknowledge that poor interoperability is responsible for the slow growth of mobile money in the country (Nigerian Communication Week 2013). It is also important to state that there are different ways to achieve interoperability. It could be through platform, agency or even via merchants. Importantly, interoperability facilitates the acceptance of e-money between different providers.

The major advantage of interoperability is that it reduces the cost for the entire operators in the payment ecosystem across agency networks. From m-banking perspective, this involves interconnection of different systems. It should be noted that the delivery of these services require compliance with bank standards. As the telecommunication infrastructure meets up with banking infrastructures, compliance with banking protocols becomes important. However, these protocols are set by vendors providing the services to banks and not the telecommunication regulator. In this way, industry standards are set by the market itself. Interoperability of services requires the use of common standards and protocols.

Business models issues among the banks, telecommunication companies and retailers: Excluding telecommunications companies from the provision of mobile banking services and only allowing banks and some independent operators, poses a serious challenge to mobile banking. Neither of these parties can operate mobile banking independently. One challenge is the issue of who owns the customer: banks, mobile money players or mobile network operators.

Although all parties would like to be the main conduit to customers (Ayaka 2012), there is a need for one to ultimately emerge so as to avoid confusing customers and hampering the success of the payment channel due to ambiguity about ownership. Secondly, the banks seem to have an advantage in being the known providers of financial services to consumers. With the banks at an advantage, their failure to ensure a consistent message and a clear value proposition to their customers could make them to lose customers relationship and this could have a negative impact on their operations.

In addition to the above challenge, there is lack of a definite and compelling value proposition for customers and merchants. This is important because, for customers to adopt the mobile banking system there has to be a strong and unambiguous benefit proposition to the customers.

“... one obvious reason why mobile banking cannot penetrate the way we want is the failure of mobile money operators, banks and other players to clearly state, articulate and communicate the benefits prospective customers draw from using mobile banking services”- Participant 10,2014.

Without clear value proposition, it might be difficult for the mobile money operators to have a coordinated and targeted marketing strategy. Henrietta Bankole-Olusina, head of mobility for Accenture Nigeria said “investment in infrastructure alone cannot stimulate the growth of the service... We can invest in all infrastructures that we want, but if we don't have the right business models, we will not achieve desirable results. A clear customer value proposition and effective business model is what this sector requires to stimulate growth.” (Nigeria Intel 2013).

Lack of basic needs for banking/financial services: The Central Bank of Nigeria in its National Financial Inclusion strategy (CBN 2012), revealed that 23.9% of the of adults population earns less than USD 2 per day and 10,9% of the employable population are unemployed. In the public sector for example, the minimum wage is N18000 for the civil

servants. Some of these civil servants have more than one wife, many children and also pay bills. The monthly salary is not enough to feed the family let alone to save. The problem is deepened by poor financial literacy and lack of trust given the number of failures that the Nigerian banking industry has witnessed since inception where some households lost their lives due to the fact that their life savings were gone. One of the participants commented as follows:

“...There is lack of awareness about mobile banking in Nigeria. I travelled from Lagos to Abuja, Enugu and Port Harcourt and I do not see any bill board displaying any information on mobile banking. All what the banks were saying is bring your money. We are better. In addition, people tended to have lost trust in the banking sector following all the distresses that have been experienced in the sector”-Participant 2, 2013.

“If you want people to do mobile banking, first empower them by creating jobs especially in the rural areas. Then there will see need to save or even send money”-Participant 4, 2014

The above view is in line with the recommendations of some researchers that to strengthen mobile banking, there may be a need for government to create needs for banking through aggressive microfinance, program for rural employment generation and efficient targeting of subsidies (Van Hove 1999; Ragarajan 2008; Ketkar et al 2012).

6. Discussions

The findings revealed a number of facilitators and obstacles that are already present in the Nigerian economy. In particular, a number of policies and regulatory frameworks have been developed with the climax being the cashless society initiative which has already been experimented in Lagos and currently extended to six other states of the federation. Each of these regulatory guidelines or framework provides the objectives, the scope and the strategic approach aimed at facilitating mobile banking for financial inclusion. Competition among banks and the need to deliver financial services with greater efficiency to their numerous customers at minimal cost will continue to motivate banks to adopt mobile banking as an alternative channel of delivering financial services. This should help develop customer loyalty, increase market penetration, reduce operational costs, and meet government service obligations.

For the banks and other money operators to deliver these services optimally, the mobile network operators appear as strategic partners. This is because both the banks and the independent mobile money services providers cannot do without them. Mobile network operators do not currently lead the provision of mobile banking services. The quest to retain existing customers and acquiring new ones is leading to more collaboration among these parties. It can also be seen as a strategy for telecommunication companies to lower their churn rates and retain customer loyalty. However, excluding the telecom operators from leading the provision of mobile banking services appear to be a regulatory lapse because telecom companies know how to handle small payments and have huge subscriber base already. This is in addition to their established network of agents across the country. So if the central bank did not give them the chance to utilize their customer base, it is most likely that Nigeria would find it difficult to replicate the Kenya's M-pesa experience.

On the other hand, conservative regulation, business models issues and poor infrastructure were identified to be *strategic* level obstacles to entrepreneurial mobile banking. Others include security of transactions and interoperability at the *operational* level. This operational level obstacles requires action from the telecoms operators and the various stakeholders. Lack of basic needs for banking services arising from low income and unemployment was the main reason for financial exclusion. This needs to be addressed by the government on a wider platform by taking measures such as strengthening of micro-finance sector, rural employment generation, programs for poverty alleviation and better targeting of subsidies by the government.

As pointed out earlier, the regulatory framework appears to be restrictive and vague. Therefore for mobile banking to be transformational and achieve the overall objective of financial inclusion, the mentality of CBN should change from being public focused to market-focused and evolve regulations on how the sector can best regulate itself. Achieving this would allow competition to be built among the industry players. The challenges that the Nigerian banking sector has experienced over the years made soundness and stability of the banking and national payment system central to financial regulation in Nigeria. However, this might have led to overregulation.

For effective mobile banking services, there is a need for particular bandwidths. At present, majority of mobile wallets are SMS-based but the shift to 3G networks and beyond may be driven by demand for higher bandwidths (higher download and upload speeds). If the idea is to be transformational and reach the unbanked, then, the way in which mobile money services are delivered should be with this type of users in mind. In this case, one has to design services that can be used by the most basic of technologies and also that require the more basic infrastructure. There is also a need for a defined value proposition that would act at guidance for marketing effort. One key success factor of Kenya's M-pesa at the inception was its value proposition which allows people in the urban areas to send money to their love ones in the rural areas. Furthermore, the successes of mobile banking depend not only on the value proposition but also on a good channel management. This involves leveraging on extensive network of agents to build reliable and consistent networks that serve customers' need. Building a successful and responsive network of agents require clearly spelling out the benefits that an agent or store owner would derive from acting in that capacity. In other words, there is a need for the retailers to know the costs of accepting deposit and payment via mobile phones from the beginning.

While misperceptions or mistakes in execution are considered barriers to the success of mobile money in developing countries, interoperability is the biggest barrier in Nigeria (Ciuci Consulting 2014). Providers could vastly improve upon the low growth of the mobile money industry by better understanding their customers and agents and investing more confidently and patiently in mobile money). Interoperability must be taken into consideration so as to enable inter-network mobile money transfers. Challenges arise for situations where there are exclusive partnerships between bank or non-bank financial entity and a telecom operator. But for interoperability to occur there must be interconnection. Interconnection covers the physical and logical linking of networks, and is an essential element in environment with multi-networks such as Nigeria. This could be through platform, agency or even via merchants. Interoperability facilitates the acceptance of electronic money between different providers without any problem. For agents, interoperability is the agents' ability to meet the needs of subscribers across multiple providers for cash out and cash in service. This will help to reduce the cost for the entire operators in the payment ecosystem across agency networks.

Security issues appear at the operational level. Hence they require the attention of the vendors supplying the operators with the technologies and the necessary regulation to monitor compliance. For mobile banking to be successful, customers must be able to trust the mobile payment application provider that their information is safe. The case of cybercriminals targeting unsuspecting mobile payment users is a critical one. The security of electronic cash cannot be the sole responsibility of financial institutions. Security breach can also come from retailers. Other sources of data breach can be from the point of the end users' mishandling of their card or revealing card details. This calls for proactive measures by the banks and the operators to tackle the security challenges inherent in this sector as well as a roadmap for enforcement of those rules.

7. Conclusions

The findings revealed that a number of facilitators and obstacles to entrepreneurial mobile banking are already present in Nigeria. These include: government policy and effort of donor agencies; stiffer competition among banks; telecommunication focus on customers' retention and revenue growth; reach of telecom networks; high penetration of mobile phones; and need for increased efficiency and lower cost. On the hand, conservative and vague regulation; security issues; underdeveloped infrastructures; lack of interoperability; business model issues; and lack of basic need for banking/financial services were identified to be the obstacles to entrepreneurial mobile banking. The findings further reveal that among these obstacles, conservative regulation, business models issues and poor infrastructure were identified to be strategic level obstacles to entrepreneurial mobile banking in Nigeria. These were followed by security issues, and then by interoperability at the operational level. Lack of basic needs for banking services arising from low income and unemployment was the main reason for financial exclusion. This needs to be addressed by the government on a wider platform by taking measures such as strengthening of micro-finance sector, rural employment generation and programs for poverty alleviation, financial education and better targeting of subsidies.

7.1 Limitations and Scope for further Research.

A number of limitations could be identified in this study. Firstly, the case study involves only one country. This may make the empirical generalization weak. Thus, further studies involving more developing countries from different continent may provide more useful insights. Secondly, investigating the facilitators and obstacles to entrepreneurial mobile banking simultaneously in a single study present a constraint on the scope of analyses and thus further studies to analyses these variables in separate studies may make room for more comprehensive analyses. Finally and perhaps the most significant limitation of the study is that a large part of the references are non-academic. This may be an indication that general research within entrepreneurial mobile banking especially focusing on developing countries is grossly undeveloped.

7.2 Recommendations

This finding suggests that the economies of developing countries present enormous entrepreneurial mobile banking opportunities. It also suggests that if mobile banking is to be transformational and is to achieve the overall objective of financial inclusion, there may be needs to address some of the challenges that are inherent in the system. Some recommendations thus follow:

1. The current regulatory regime appears to be vague and restrictive. Thus, there may be a need for the regulator to formulate policies and guidelines that would help build confidence in the entire system. For mobile banking to be transformational, the mobile network operators appear to be in a position to deliver financial services to the poor since they can leverage on current customer base. Therefore, any effort aimed at strengthening the roles of the network operators as lead initiators may be in the right direction. Also, regulation must be proportionate to the risks and benefits.

2. Business model issues may require the attention of the top management of all the stakeholders in the mobile banking value chain. Good channel management and in particular management of retailers, is very crucial for the financial inclusion of the poor. Therefore, a business model that recognizes and manages this accordingly is more likely to succeed than others.

3. Security of mobile banking transactions is not the sole responsibility of the provider of the mobile money services, but a joint effort of all the stakeholders. These range from the government that enact laws to ensure enforcement in case of breaches, to the vendors who develop and built mobile technologies with security in mind, to the mobile money operators who put security measures in place to mitigate the security risks, as well as the consumers who has the sole responsibility of keep sensitive information safe.

4. Lack of basic needs for banking resulting from low income, unemployment, financial illiteracy appears to be the main reason for financial exclusion. This may need to be addressed by the government on a wider platform by taking measures such as strengthening of micro-finance sector, rural employment generation, programs aim at poverty alleviation, financial education and better targeting of subsidies.

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Appendixes

Appendix A: List of interview Participants

Appendix A: lists of Interview Participants				
Sector	Names of participant	position	Field/Interest	Date
Academic	Participant 1	Professor	Economics/ financial market and derivatives	Tuesday February 4,2014
	Participant 2	Phd	Marketing/ adoption of network technologies and consumer behavior in financial services	Tuesday July 23,2013
	Participant 3	Phd	Computer Science/ networks security and system configuration for financial services.	Tuesday February 4,2014
Mobile payments Services	Participant 4	Brand manager	Mobile payment services	Tuesday July 23,2013
	Participant 5	Agents Trainer	Mobile payment services	Tuesday July 23,2013
	Participant 6	Project Manager	Mobile payment services	Tuesday July 23,2013
	Participant 7	Business Development Manager	Mobile payment services	Tuesday February 4,2014
Finance	Participant 8	Financial analyst	Journalism	Monday February10,2014
	Participant 9	Financial analyst	Journalism	Monday February10,2014
	Participant 10	Fin.analyst	Consultancy	Monday February10,2014

Banking	Participant 11	Manager	Marketing/ Product and services	Tuesday February11,2014
	Participant 12	SeniorManager	Market Research	Tuesday February11,2014
	Participant 13	Senior manager	Strategic Unit	Tuesday February11,2014
	Participant 14	Senior manager	Technology/ Hardware	Tuesday February11,2014
Telecom	Participant 15	Senior Manager	Telecom/Mobile banking services development and deployment	Wednesday February 12,2014
	Participant 16	manager	Systems security	Wednesday February 12,2014

COVER LETTER

Dear Sir/Madam

My name is Benjamin Agenyi. I am a graduate student at the Blekinge Institute of Technology, Karlskrona, Sweden. I am enrolled in the Master Program "Entrepreneurship". I am currently writing my thesis on the topic "mobile banking and entrepreneurship development in developing countries, "which are the facilitators and obstacles to entrepreneurial mobile banking" The aim of the study is to develop an entrepreneurial mobile banking model for entrepreneurs.

In order to successfully complete the "thesis", I require some primary data. This data would be collected through Telephone Interview and will be treated with utmost confidentiality.

I believe strongly that your input would be relevant to this study and wonder if you could spare me few minutes of your time (20-25min) out of your tight schedule for an interview.

Thank you in anticipation of your cooperation.

Sincerely,

Benjamin Agenyi

Skype: benjamin.agenyi

Email:beag12@student.bth.se

Appendix C: Interview Guide

This research is purely for academic purpose and is being undertaken as a part of my study at the Blekinge Institute of Technology. The findings will be written up as a “Master Thesis” and will be available for further viewing. To avoid any inconveniences now and in the future, please do indicate if you will want your identity to be kept as anonymous or distinct.

QUESTIONS:

- 1) Which factors are facilitating mobile banking in Nigeria? In what ways do you think these factors facilitate mobile banking? Which other factors exist?
- 2) Which are the entrepreneurial opportunities (if any) in the mobile banking industry in Nigeria? Why do you consider them good opportunities for mobile banking? How are they currently being exploited?
- 3) Which factors are obstacles to mobile banking in Nigeria? Among these factors which ones do you considered the most significant? How do you think these obstacles can be addressed?
- 4) Which are the entrepreneurial threats (if any) in the mobile banking industry in Nigeria? Which of these threats do you consider the most significant? How can these threats be handled?
- 5) Would you say that Nigeria is ripe for mobile banking?