



## Adopting Mobile Banking Technology To Achieve Financial Inclusion In Islamic Countries

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Mohamed Ghezal and Fayçal Chiad

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# **Adopting Mobile Banking Technology To Achieve Financial Inclusion In Islamic Countries**

Mohamed Ghezal  
ghezalm19@gmail.com  
PhD candidate IiBF, IIUM

Dr. Fayçal Chiad  
faychi04@yahoo.fr  
Sétif 1 university

## **ABSTRACT**

Financial products and services drive the world's development and reduce poverty. However, more people globally currently lack the most basic financial services. Recently, enhancing financial inclusion has been driven by a new digital technology accessed via mobile money account. Meanwhile, mobile money is having a significant social impact in the region through services that target financially excluded population groups. As we know, the spread of mobile money in Kenya slashed poverty, drove up savings and helped women leave agriculture for jobs in business and retail. The aim of this paper is to propose mobile money model that lead to ameliorate the financial inclusion in Arab Muslim countries in the MENA region. This study is qualitative approach by focusing on online desk research as sources of data to explore and to design the proposed model. MENA could easily follow in Kenya's footsteps, and earn immense benefits. The adoption of mobile money systems makes transactions cheaper, easier and safer. Allowing non-banks to participate in mobile money and Promoting interoperability without mandating will simplify financial inclusion to unbanked individuals. Governments in the Middle East and North Africa should enable digital innovation such as mobile money with conducive regulations to develop to reach unbanked people. This study contributes to understanding the role of financial inclusion on economic growth theoretically and empirically. This would provide a bigger solution for the policymakers to promote financial inclusion through enhancing the usage of mobile money. Mobile money has transformed the landscape of financial inclusion in emerging market countries. This study explains how mobile money can help and ameliorate several areas of market failure in MENA economies, including saving, insurance, and the empowerment of women.

**Keywords:** mobile banking, mobile money, Islamic finance, digital technology, financial inclusion

## **Introduction**

Increasingly, mobile financial services are the most thriving facilities in many developing economies. Over decade, mobile money has become key means to access to financial services far away from the traditional banking branches to wide people. Mobile money services are being spread among unbanked and underbanked individuals in rural areas, agriculture, women and poor community in far regions. it widespread across emerging markets as a key instrument to reach the purpose of financial inclusion(Donovan 2012, Lal and Sachdev 2015).

Mobile money continues to play a vital role in financial inclusion which means the development of new method to enable population in low income to get access to formal financial services. Financial inclusion is considered a key pre-requisite for lifting vulnerable people out of poverty and enhancing their economic position(Lal and Sachdev 2015). Emerging markets have seen an impressive increase in financial inclusion rates, which can be attributed to simultaneous growth in active mobile money use. Where mobile money transactions cash in cash out are spread and grow in many regions in the world, it registered more than 866 million accounts in more than 90countries and 272 mobile money deployments with \$1.3 billion per day of transaction values by the owners of mobile money. However, globally,

around 1.7 billion individuals are unbanked or underbanked and still lack access to safe, reliable and convenient financial services (Pasti 2018).

There have been some notable successes especially in Sub-Sahara Africa. M-Pesa in Kenya has captured the world's attention not only because of its success, but also because it is offered by an unlikely financial services provider, Safaricom is Vodafone branch in Kenya (Tarazi and Breloff 2010). Islamic countries in MENA region could easily follow in Kenya's footsteps to develop mobile money services among vulnerable population and reap immense benefits. In addition, the percentage of mobile money users in MENA is the lowest in the world and low financial inclusion. The Global System for Mobile Association (GSMA) report shows that number of registered accounts in MENA represent just 48.9 million which represent merely 5.6% of the global spread of registered mobile money customers and value of transaction near to \$473 million comparing to sub-Sahara Africa registered 395 million or near 46% and \$26.8 billion respectively (Pasti 2018). This weak introduction of mobile money in Islamic countries especially in MENA region lead us to ask the question how can unbanked Islamic countries' population be included into financial system through mobile money?

To answer this question, the paper will discuss the benefits and potential impact of mobile money on unbaked individuals, especially for promoting financial inclusion in the Islamic countries. This conceptual paper reviews both terms financial inclusion and mobile money in the literature with concentration on Islamic countries special the MENA region. This paper main data sources are extracted from researches and reports available online.

The paper is structured as follows. In Section 2 the concept of financial inclusion is developed. Further in section 3, it discusses the concept of mobile money, advantages, how it works and explaining Kenyan M-Pesa model to include the unbanked and underbanked individuals through mobile money services. Then in section 4 illustrates the proposed model that can be adopted for Islamic countries. Then, it ends with conclusion.

## **1. FINANCIAL INCLUSION**

Access to banking and financial services is a main factor in accelerating viable economic and social development, decreasing poverty and unemployment, and fostering financial stability (Zins and Weill 2016).

Financial inclusion focuses on ensuring that all individuals have access to and use of fundamental financial services at affordable costs (Tarkesh, 2011). Financial inclusion plays a key role in fostering economic growth and poverty reduction (Iqbal and Sami 2017, Raman 2012). Iqbal and Sami (2017) noted that, in terms of their contribution to economic growth and social progress, financial inclusion is an important priority in countries. It helps to reduce the gap between rich and poor people.

In recent years, central banks of Arab countries have undertaken several reforms in the financial sector to enhance financial inclusion. These reforms have focused on establishing a legal framework and a financial infrastructure that is more adapted to banking, to support the decentralized financial sector and to implement measures that promote the widespread financial services.

Financial inclusion has become a major concern among policy makers, researchers and other financial sector stakeholders. Financial inclusion means that individuals and companies have access to affordable financial products and services that meet their different needs of transactions, payments, savings, credit or insurance services.

Despite the many benefits of financial inclusion, the reality of developing countries shows a significant gap between the availability and accessibility of financial services at the right cost.

Financial services facilitate the daily life and help families and businesses to plan long-term goals. Since they have accounts, people are likely to use other financial services, such as credit and insurance, to start and expand businesses, invest in education or health, manage risk and face financial shocks, which can improve their overall lives.

## **2. DIGITAL TECHNOLOGY: MOBILE MONEY**

Increasing account owners among unbanked and adults remains one of the most important objectives to reach by the government. Adhering people to shift their transactions from cash to cashless is still far away to exist in developing countries. However, new digital technologies such as mobile money can add great opportunity to non-banked to access the financial services (Demirguc-Kunt et al. 2018).

### **2.1. Mobile Money Account**

#### **2.1.1. Definition**

Mobile financial applications present new solution to many individuals and groups in developing economics world. Mobile money technology is adopted by traders, health care, agricultures, and many other sectors. At basic level, mobile money is substitute banks branches and it sends cash by non-formal ways via partnership between banks sector and telecommunication operators. It enables people who cannot go to a bank branch or ATM to use financial services (Mauree and Kohli 2013). These services have to be provided to unbanked adult who do not have access to a formal account (Pasti 2018). Donovan (2012) and the Global Systems for Mobile Association (GSMA) define mobile money as a provision of financial services using a mobile phone (Donovan 2012, GSMA 2012).

In developing countries, the main services that mobile financial services offered include three core services which are payment transfers from peer-to-peer, finance for instance insurance contract, and banking such as inquiry about account balance (Mauree and Kohli 2013, Donovan 2012).

#### **2.1.2. Benefit**

Recently, Mobile money has spread to large community in international level. It allows millions of people to be included in financial system to transact, pay and transfer money cheaply, securely and efficacy (Mauree and Kohli 2013). Mobile money affects vulnerable people such as households, displaced persons, women and businesses and ameliorates several areas of market failure in developing economies (Pasti 2018). Its potential advantages are real and are cited as follow (Donovan 2012).

- Wide acceptance of Mobile money and its successful lead to be inexpensive services among their users comparing to alternative services to cash in branchless banking.
- Lower costs when using mobile money have encouraged people especially the poor community in rural area to translate and remit their money rather than the traditional forms.
- Mobile money is more alternative safer than traditional services such as cash in hand. It reduce the risk of robbery due to less need to cash to pay off and mobile money is invisible.
- Mobile money can be the way to stock the valuable assets with high accessibility and convenient medium for delivery of financial services and more reliable than traditional methods.
- In some countries where mobile money is wide used by their individuals, mobile money users increase and improve the level of their livelihood compared to nonusers.
- Mobile money helps to overcome some hindrances of less spread of financial institutions and cost structure in developing economies. It serves as useful means to access cash any time and anywhere in local area and event in international countries with some conditions. Mobile money transfers are beneficial to poor community to receive and transfer money. More sophisticated financial services such as savings, credit, and insurance can prove more beneficial to the poor people to enhance financial inclusion.
- The spread of mobile money have lead many others institutions and organisations to utilise mobile money services to enhance their traditional offerings.

#### **2.1.3. How Mobile Money Works:**

Mobile money offers a new methods to get access to many financial services. the poor community people who are unbanked or less using banking services transfers money from peer to peer using a mobile phone to reach this type of services (IMF, 2019). The function of mobile money needs the presence at least 6 parties and of course mobile devices to conduct person to person money transfer.

The operation of transferring money from person to person need the presence of the prerequisites key elements. Individuals have to own SIM card of the telecommunication provider. a national identity card for registration is needed. Also, a mobile money agent is necessary to obtain electronic mobile money

account linked to mobile phone number, and hand phone to conduct the transaction through a SIM card(Hamdan 2019).

The money transferred between individuals can be executed with the same telecommunication company with different account holders or different account holders of different telecommunication companies(Bueche Jr 2014).

One individual who is a payer want to transfer money to another individual who is the payee. The payer open and deposit money into the mobile money account via mobile money agent by giving him cash to the agent. In return, equivalent value of “electronic money” add to payer. the payer transfer the sum of money to the payee using handheld mobile devices such as cell phone, smart phone or another simple devices to send SMS or any other types of messages. Meanwhile the agent transfer the money to the payee. The telecommunication company when receives this message execute the transfer immediately to the payee. A secure text message (SMS) with a code is sent to the recipient, authorizing a retail agent or mobile money agent to transfer money from the payer’s account into cash for the payee. The payee may consult the web site or receive message from the telecommunication company informs him that he received sum amount of money. Once the transfer is achieved the telecommunication company send message to the payer confirming the transaction without using formal bank accounts, and the transactions are authorized and recorded in real time(Bueche Jr 2014).

The same thing can be done for withdrawal of money, the payer can transfer electronic money via its mobile phone to the cash using merchant’s mobile money account, and receive cash in return(Aron 2018).

## **2.2. M-Pesa Model Experience In Kenya**

### **2.2.1. What is M-Pesa?**

The experience of the developed world to use mobile money was not remarkable. Philippines was the first country adopted the services of mobile money transfer. The Philippines SMART Money company inaugurated this type of services in 2003, and now more than 272 services had been launched across 90 developing countries where Kenyan M-Pesa is most successful in developint countries (Pasti 2018).

Kenya is the country that has seen the rapid and widespread growth of mobile money in developing economies., Safaricom which is the Kenyan subsidiary of Vodafone, a leading mobile operator, revolutionized the way Kenyans manage money. Safaricom offers many financial services to its subscribers, who have bank account and unbanked individuals. In March 2007, it launched a commercial payments service known as M-Pesa with the slogan “send money home”, exploiting the proliferation of mobile phone ownership. The word M-Pesa is derived from a combination of two words, “M”, which means a short form for the word “Mobile”, and “Pesa”, which is a Swahili word that means cash money (Aron 2018)).

M-Pesa via SMS texting was the first service offered in Kenya to transfer money. Using a basic mobile phone, users could electronically transfer money. The exchange of money between individuals- the deposit and withdrawal—carry out of existing network of agents that essentially act as ATMs. M-Pesa agents include small shops, gas stations, post offices, and even traditional bank branches. Today, there are more than 110,000 M-Pesa agents, 40 times the number of bank ATMS in Kenya (“What Kenya’s mobile money success could mean for the Arab world,” 2018).

### **2.2.2. M-Pesa’s effects**

A decade later, on its tenth anniversary, Safaricom controlled 65% of the Kenya mobile money market where 67% of the adult population used financial services in 2013 versus 41% in 2009 due to uses of mobile money services(Aron 2018). In addition, M-Pesa was spread to over 30 million customers served across more than 10 countries (“What Kenya’s mobile money success could mean for the Arab world,” 2018).

### **2.2.3. Agency network**

M-Pesa functioned via SMS texting to transfer money between persons which is the first service offered in 2007. As majority of people are poor who use a basic mobile phone, they send electronical message to other party to withdraw cash by the other person. The advantage of M-Pesa is that the exchange of money such as deposit or withdrawal can be conduct throughout a wide range of agents network which

essentially act as ATMs. However, wholesale agents which are banks or financial services merchants are authorised to limit amount on electronic money stored in their M-Pesa accounts, the retail agents manage their liquidity via the banking services. M-Pesa agents include small shops, restaurants, gas stations, post offices, and even traditional bank branches. Today, there are more than 136,000 M-Pesa agents countrywide, more than 40 times the number of bank ATMS in Kenya by the end of 2017(Aron 2018).

#### **2.2.4. M-Pesa growth**

The leading telecommunication company Safaricom has allowed to function as unique service provider of mobile money by the Kenyan authority. At inception, since 2007, M-Pesa's services are intended to serve the unbanked people to get access to financial services. At first, it was limited to buying airtime for mobile calls or paying utility bills and schools fees. In 2012, M-Pesa launched a service enabling users to open interest-paying saving accounts and to obtain short-term loans. A decade later, in 2016, due to push back from its competitors, the Competition Authority of Kenya ordered Safaricom to open its network of M-Pesa agents to the other telecom companies offering mobile money services. In 2017, Safaricom launched a platform that enabled small-holder farmers to use mobile phones to connect with suppliers (Aron 2018).

The growth of M-Pesa is the result of many factors such as the ease to open an account and friendly regulation. The ease of setting up an account is one of the growth factors of M-Pesa which is free and only requires an official ID, its simplicity of use, its affordability, the high literacy rate of the population, and the high penetration of mobile phones. Moreover, another key element to M-Pesa's growth worth emphasizing is the friendly regulations adopted by the Central Bank of Kenya (CBK). It decided not to oppose the entry of the telecom operator into the financial sector as long as it offered sufficient guarantees.

### **3. MOBILE MONEY ECOSYSTEMS AND MODELS**

#### **3.1. Mobile Money Ecosystems**

Mobile Money ecosystem is composed from the network of both persons and organisations existing in economy for the purpose of enhancing mobile money services through taking root and going to scale(Jenkins 2008). A number of stakeholders are involved in the mobile money business ecosystem. The health of the ecosystem determines the individual health of the parties involved. The stakeholders within mobile money ecosystem depend on consumers, mobile network operators (MNOs), banks, agents, merchants and the regulators who are the key players in the system.(Mauree and Kohli 2013, Tobbin 2011, Jenkins 2008)

**Consumer:** the customers are the final beneficent of a mobile money services. The behaviour of the customers of these services conclude the success or failure of the mobile money ecosystem.

**Mobile network operator (MNO):** the MNO is the core party in mobile money ecosystem. Its technological infrastructure and its existing distribution channel and wide loyal customers helps to be a key player in the mobile money ecosystem.

**Banks:** financial institutions or the banking sector as experienced and trusted in transacting money among businesses and individuals come into mobile money ecosystem with strong background to provide many solutions for both MNOs and customers.

**Agents:** the agents who act on behalf of MNOs are the primary contactor with customers. MNOs usually, use their own distribution branches to reach customers. However, many other retail agents can function as branches of MNOs.

**Merchants:** merchants come between the customers and MNOs providers. Generally, merchants are all traders who accept receiving payment of the goods or services through mobile money.

**Regulator:** MNOs function in better ecosystem where there is strong regulation framework for mobile money. Regulations promote MNOs system through efficiency, financial inclusion, enforcement to compliance and licencing.

### 3.2. Mobile Money Business Models

The emergence of mobile money in developing economies have an impact on financial institutions. Mobile money providers started with MNOs at inception. However, later financial institutions like banks entered the field of providing electronic money through the partnership with the telecommunication companies. Thus, it exist a variety of business models of mobile money which depend on the economic level and the regulatory regime of the country. The three main models are (Donovan 2012, Mauree and Kohli 2013, Tarazi and Breloff 2010):

Bank centric or bank based, mobile operator led or nonbank-based, and partnership or collaboration model.

1- **Nonbank**: the developing economy countries their banking system is not sophisticated and mature yet. Thus, the percentage of unbanked is too high among the adults and poor population. However, the uses of mobile phone is widespread among the individuals and the infrastructure of the telecommunication companies was already there.

2- **Bank centric or bank based model**: the majority of people in developed economies have an account or direct contractual relationship with a licensed bank and mobile money has its regulatory framework. In this model banks have already its customers and uses MNOs just to offer telecommunication services to facilitate the spread of banking services.

3- **Partnership business model**: this type of model is applied when the country is developed economy and banks partner with MNOs to manage mobile money company.

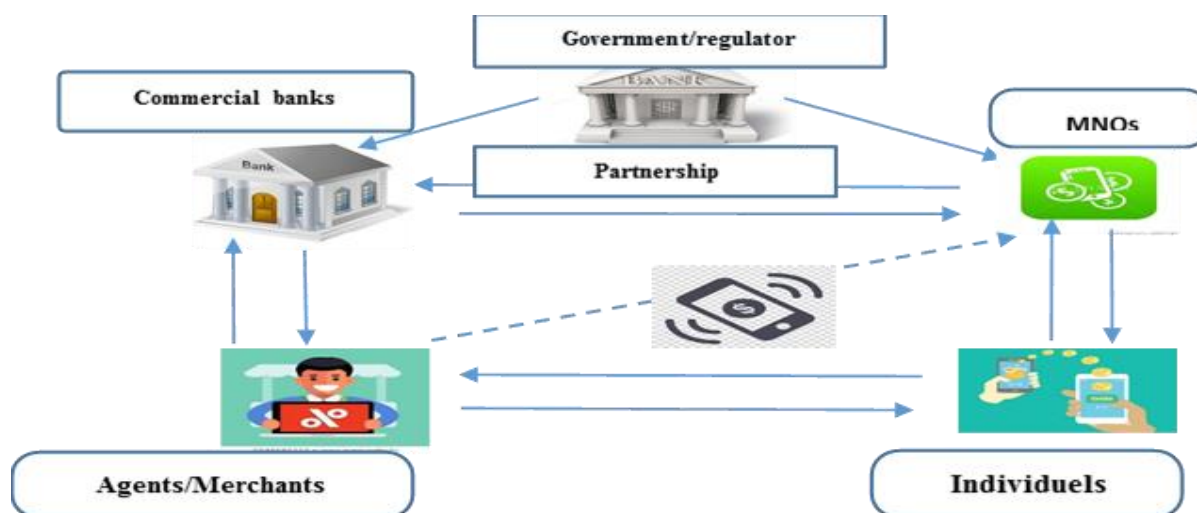
### 3.3. Proposed Model Of Mobile Money To MENA Community

In a growing number of Islamic countries in the Middle East and North Africa (MENA) region have had limited availability of mobile money services and low financial inclusion .the GSMA report shows that number of registered accounts represent just 48.9 million and value of transaction near to \$473 million comparing to sub –Sahara Africa registered 395 million and \$26.8 billion respectively(Pasti 2018). However, mobile phone is used by large number of people in Islamic countries. MENA region, in 2018 registered 382 million unique mobile subscribers and the operators generate \$65 billion as total revenues. The contribution of mobile industry into local economies of MENA region is around \$191 billion.

The widespread of mobile phone among population simplify the access of many services and financial products in presence of centric role of regulator to control the right of stakeholders. The successful adoption of mobile money in Islamic countries can concentrate on partnership model between government which is the regulator with the bank sector and telecommunication operator to implement financial inclusion based on mobile money to reach many unbanked and poor individuals(Santoso and Meera 2015).

A designed model of financial inclusion based on mobile money is collaborating three main parties. Firstly government which is the regulator, secondly central bank and commercial banks, and thirdly the telecommunication or mobile network operators. Also, agents/merchants and customers are included. The following figure illustrates this model.

Figure 1: partnership mobile money model to financial inclusion in MENA region.



The model depicted above shows that the presence of government, banks and mobile network operators are crucial and central to boost the uses of mobile money services to enhance financial inclusion of poor community and unbanked persons. The government orientation and partnership between MNOs-banks will certainly increase the financial inclusive people.

#### 4. CONCLUSION

The study aims to identify the role of mobile money service in promoting financial inclusion. As access to banking and financial services is one of the major dilemmas facing the majority of the Muslim population, so the study came to search for the extent of the contribution of the mobile money services to cover and integrate a number of categories Financially who do not have any contact with the banking sector in particular.

The study reached a number of results, the most important, the governments in the Middle East and North Africa should enable digital innovation with conducive regulations and the development of a regulatory ‘sandbox’, which guarantees the security of transactions but allows for experimentation that would stimulate the development and adoption of mobile money. Also, most users of the mobile payment service have accounts from the banks, in addition to the presence of various obstacles facing the spread of the mobile banking. The study recommended to achieve and increase financial inclusion through partnership business model to generalize the mobile money services to all banks and mobile network operators, with plans to distribute agent locations geographically to enhance the spread of the services and focus on advertising and continuous advertising to introduce the service to attract more users.

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