

*Access to Finance and Mobile Banking in Africa: Challenges and Prospects*

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**Highlights**

- The mobile banking function is investigated in Africa.
  - African countries data is used.
  - Smooth development is impeded by poor telecommunication infrastructure.
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**Abstract**

**Purpose:** This study investigates the challenges and prospects of mobile banking in Africa. **Methodology:** We examined the growth of mobile phone technology over the past decade and consider its potential impacts upon quality of life in African countries via mobile banking. Mobile banking has been observed to perform via SMS or the mobile internet but can also use special programs called clients downloaded to the mobile device. The descriptive data analysis used showed that there has been low financial services penetration compared with the exponential growth of mobile telephony in sub-Saharan Africa, thus creating a unique niche for mobile phone banking to develop on the continent. **Findings:** However, low level of internet penetration and poorly developed telecommunication infrastructure impede smooth development and improvements in mobile banking in Africa. **Recommendations:** These challenges can be addressed by the authorities through policy reforms and scaling up investment in the ICT sector, as well as proving proper awareness on mobile banking usage to the populace.

**Keywords:** Mobile banking, Finance, Challenges, Prospects, Africa

**JEL Classifications:** G30

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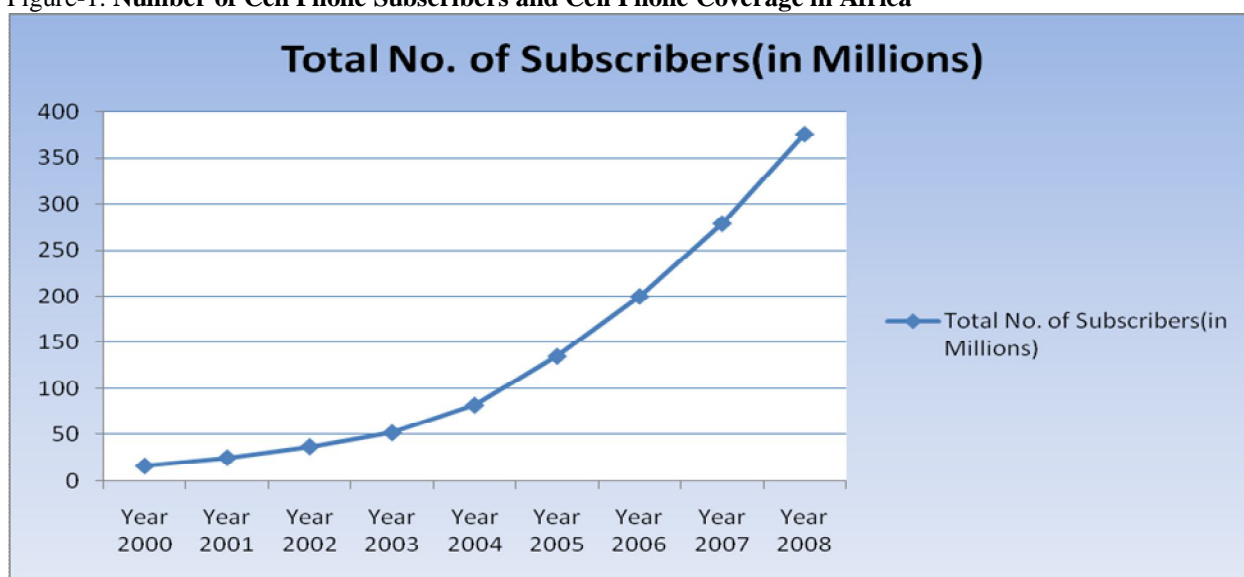
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### **I. Introduction**

Over the years, it has been observed that improving access to financial services can contribute to transforming peoples' lives in developing countries. However, the majority of the ordinary people in these countries still have limited access to these services. Over a billion people in Africa, Latin America and Asia are currently without bank accounts but do have a mobile phone. The annual growth rates of mobile phone penetration in the developing world have ranged between 30% and 50% or higher, and penetration has been rapidly increasing. In Africa, mobile phone, mobile phone penetration exploded during the last ten years between 1998 and 2009, Africa witnessed an increase from 0.53 per 100 people to 42.82 per 100 people. At the same time, the average price of a 2G handset decreased from 150 USD in 2003 to 75 USD in 2008. Africa is now considered to be the fastest emergent continent for ICT sector growth, and the mobile phone penetration has exploded since year 2000 as can be observed in Figure-1. By 2012, most villages in Africa will have coverage, with only a handful of countries – Guinea Bissau, Ethiopia, Mali and Somalia – relatively unconnected (Arker and Mbiti, 2010). Mobile telephony has brought new possibilities to the continent. Across urban-rural and rich-poor divides, mobile phones connect individuals to individuals, information, markets, and services.

Figure-1: **Number of Cell Phone Subscribers and Cell Phone Coverage in Africa**



Source: Aker and Mbiti, (2009)

The low financial services penetration compared with the exponential growth of mobile telephony in sub-Saharan Africa is creating a unique niche for mobile phone banking to develop on the continent. However, the majority of the population has no access to banking services, with only 20% of African families having bank accounts. For instance, in 2007, only about 30% of household in Kenya had bank accounts; and in Benin, with a population of 7 million had only 35 bank branches in 2006. The limited access to financial services in Africa stems particularly from deficient infrastructure, physical-geographical isolation or inaccessibility, financial illiteracy, all of which culminate into exceedingly high cost of providing banking services. Ethiopia, Uganda and Tanzania for instance, each have less than one bank branch per every 100,000 people compared to 100 in Spain. This ratio however shows a high disparity across the continent, with Namibia having more than four, Zimbabwe more than three and Botswana nearly four bank branches per 100,000 people. Even Africans with bank accounts often face high charges for moving their cash around, due to high transactions costs. It is this gap in the financial services market that is creating a unique niche for mobile phone banking to develop on the continent, enabling a growing number of people to access financial services for the first time. In this context, new technology-based financial services, such as mobile phone banking and the use of smartcards, have the potential to substantially increase people's access to finance. In South Africa, the DRC, Zambia and Kenya for instance, mobile phone banking is taking services to remote areas where conventional banks have been physically absent. Subscribers can now open accounts, check their balances, pay their bills, transfer money, and cater for their daily basic needs. Mobile phones are also being used now for other public services such as monitoring elections and delivering public health messages.

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### ***II. Mobile Banking Concept and E-Payments Emergence***

Mobile banking (also known as M-banking or SMS banking) is a term used for performing balance e checks, account transactions, payments etc. via a mobile device such as a mobile phone. Mobile banking is most often performed via SMS or the Mobile Internet but can also use special programs called clients downloaded to the mobile device. The standard package of activities that mobile banking covers are: mini-statements and checking of account history; alerts on account activity or passing of set thresholds; monitoring of term deposits; access to loan statements; access to card statements; mutual funds/equity statements; insurance policy management; pension plan management; status on cheque, stop payment on cheque; ordering check books; balance checking in the account; recent transactions; due date of payment (functionality for stop, change and deleting of payments); PIN provision, change of PIN and reminder over the internet; blocking of (lost/stolen) cards; domestic and international fund transfers; micro-payment handling; mobile recharging; commercial payment processing; bill payment processing; peer to peer payments; withdrawal at banking agent; 3 and deposit at banking agent (Rahman, 2012).

Several initiatives have emerged for initiating e-payments from mobile phones by using short messages (SMS) or phone calls. These have also been referred to as m-payments (Vassiliou, 2004). He further indicates that most m-payments initiatives follow a simple model where the customer (payer) first identifies him/herself to the merchant by providing his/her phone number or by calling the merchant. The merchant forwards the payment and customer information to the payment service provider (e.g. through the mobile network). The service provider then presents the payment information to the payer for confirmation and upon confirmation (e.g. with a PIN number) records the transaction. The communication between the customer and the payment provider and/or merchant can take place through phone calls and/or short messages. The paid amount is collected by direct debit from the payer's account and credited to the beneficiary's account. Operational examples of this model in the EU include Paybox (Austria, Germany, Spain, Sweden and the United Kingdom), Mint (Sweden) and e-pay (Finland). Vassiliou, (2004) noted that mobile devices are well positioned for making payments, because the penetration level of digital mobile phones is higher than that of personal computers. "It is also possible to use mobile phones for all types of payments, both at manned and unmanned payment terminals, for internet payments and possibly for payments between consumers". M-payments have been introduced by MTN in Ghana recently.

### ***III. Access to Finance and Mobile Banking- Taking Bank to Customers***

With the electronic payment system emergence, banks are recognizing the potential of reaching millions of prospective customers, especially the rural population who account for more than 60% of Africa's total population and have no access to banking services. The rural commercial bank branch network is still underdeveloped. However, since more than 50% of the adult population in Africa has access to mobile telephone, mobile banking could enable the rural population to have access to financial services as demonstrated by the case of Kenya and South Africa. The cost of formal banking in Africa is high; in some countries the minimum deposit can be as high as 50% of per capita GDP. In addition, internet and broadband subscription are still low, making internet banking out of reach for most of the population. In this regard, mobile banking can be used to provide financial services to the unbanked. Financial institutions and mobile phone service providers are introducing resourceful methods of bringing these unserved populations into the formal economy using mobile phones. For the banks, the main advantages of the mobile phone lie in its capabilities to reach everywhere. Its power is in transforming the economics of service delivery, especially by reducing the costs of financial transactions. Mobile banking is a powerful way to deliver savings services to the billion people worldwide who have a cell phone but no bank account. It has a number of advantages over traditional banking methods as it breaks down geographical constraints; it also offers other advantages such as immediacy, security and efficiency. These advantages, some of which can be quite practical under remote field conditions are briefly highlighted.

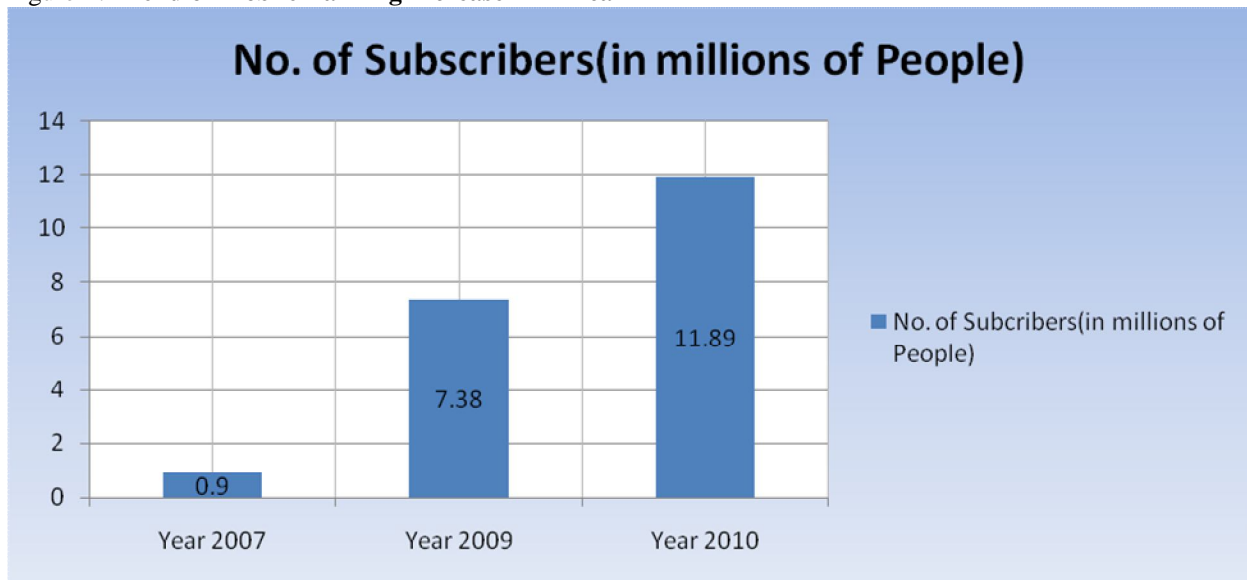
First, the mobile phone can serve as a virtual bank card where customer and institution information can be securely stored, thereby avoiding the cost of distributing cards to customers. In fact, the subscriber identity module (SIM) card inside most if not all GSM phones is in itself a smartcard (similar to the virtual bank card). Thus, the bank customer's PIN and account number can be stored on this SIM card to perform the same functions as the bank virtual card. Second, the mobile phone may serve as a point of sale (POS) terminal. As such a mobile phone may be used to transact and communicate with the appropriate financial institution to solicit transaction authorization. This is the same functions of a POS terminal at malls, retail, or other stores. A mobile phone can duplicate this functionality with ease. Third, the mobile phone can also be used as an ATM. A POS is used to pay for goods or services at the store.

If we consider cash and access to savings as “good and services” that customers buy at the store, then that POS will also serve as cash collection and distribution point which basically is the function of an automatic teller machine (ATM). Fourth, the mobile phone may be used as an Internet banking terminal. This providing two fundamental customer services: a) instant access to any account; and b) the ability to make payments and transfers remotely. The mobile phone device and wireless connectivity bring the Internet terminal into the hands of otherwise unbanked customers.

#### **IV. Mobile Banking initiatives in Africa**

As indicated earlier on, African e-payment system is not well developed and very limited in use. However, some African countries have seen remarkable progress in e-payments and e-commerce. There has been an increasing trend in mobile banking in African countries as captured by Figure-2.

Figure-2: **Trend of Mobile Banking Increase in Africa**



Source: Ondiege, (2013)

South Africa is by far the country where mobile banking is most widely used on the continent. By end of March 2009, the total mobile customer base in South Africa increased by 3.8% from 2008 to over 51.9 million with the mobile penetration rate rising to 107%. About half of South Africa citizens don't have bank accounts. Nearly 40% are either unemployed or work informal jobs paid in cash. Bank charges are high and banking regulations are so strict – such as proof of regular income – that they prevent many poor people from having formal bank accounts. One of the most common mobile banking initiatives of South Africa is the MTN Banking Mobile Money Account. This Account gives clients complete access to banking flexibility. Providing access to client account from anywhere in the world, and at any time, Mobile Money puts customers in control of their finances through a secure connection using MTN cellphone. South Africa's MTN in 2010 announced plans for a fully-fledged bank account on mobile phones, with an optional credit card. The service will be extended to the 20 countries where MTN operates, including Uganda, Nigeria, Cameroon and Ivory Coast, which combined have over 90 million mobile phone users. Other mobile banking transfer services launched by south Africa are: WIZZIT Scheme - Established in 2004, Flash Mobile Cash by Eezi (“Take it Eezi”)- Known as Flash Mobile Cash(the service gives home shop owners the tools to be the bank for communities where formal banking infrastructure does not exist) and Vodacom - Nedbank M-PESA. In the case of Kenya, only 19% of the adult population in Kenya has access to a formal bank account and banking services in Kenya are largely restricted to urban populations. Cellular operators are providing banking services in the country with M-PESA and MKESHO by Safaricom and ZAP by Zain. The number mobile telephony subscribers, which stood at 4.5 million in 2005, grew by 34.2% to 17.4 million in 2009 from 12.9 million in 2008.

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It is estimated to be more than the 20 million in 2010. The mobile telephony capacity has also increased from 6.8 million in 2005 to 29.0 million in 2009. The M-PESA mobile transfer services launched in 2007 have evolved with time and now organizations are able to pay employee salaries using the Bulk Payment function while mobile phone users are able to transfer money and pay for their utility bills using the service. The latest partnership between Equity Bank and Safaricom to launch the M-KESHO account is the perfect showcase of convergence between the mobile phone and banking. This convergence has the potential of bringing over 18 million Kenyans into formal banking services. M-KESHO accounts, like the M-PESA, have no account opening fees, minimum balances or monthly charges. M-KESHO accounts earn interest and have no limit on account balances. Other features of the account include microcredit facilities (emergency credit availed through MPESA), micro insurance facilities as well as a personal accident cover that translates into a full cover after 1 year. MKESHO clients can open accounts at either Equity Bank branches or at a subset of some 5000 M-PESA agents at which Equity Bank will place a bank representative and transact at any of the 17,000 M-PESA retail outlets.

### ***V. Challenges of Mobile Banking in Africa***

Infrastructure is necessary for the successful implementation of mobile payments. Proper Infrastructure for electronic payments is a challenge (Tadesse and Kidan, 2005). For electronic payments to be successful there is the need to have reliable and cost effective infrastructure that can be accessed by majority of the population. Electronic payments communication infrastructure includes computer network such as the internet and mobile network used for mobile phone. In addition, banking activities and operations need to be automated. A network that links banks and other financial institutions for clearing and payment confirmation is a pre-requisite for electronic payment systems. Mobile network and Internet are readily available in the developed world and users usually do not have problems with communication infrastructure. However, in Africa mobile networks and internet are not easily accessible. "Poor communication infrastructure is one of the reasons that hinder the e-payment system in Africa" (Tadesse and Kidan, 2005). Worku (2010) noted that low level of internet penetration and poorly developed telecommunication infrastructure impede smooth development and improvements in e-commerce and mobile banking in Africa. In a related work, by Mishra (2008) in Nepal, Telecommunication and electricity are not available throughout the country, which negatively affect the development of e-payments. According to Mishra (2008), the development of information and communication technology in Nepal is a major challenge for e-payments development. Since ICT is in its infant stages in Nepal, the country faces difficulty promoting e-payment development.

### ***VI. Prospects of Mobile Banking in Africa***

The high growth and penetration rates of mobile telephony that is transforming cell phones into banks in pockets in Africa is providing opportunities for countries on the continent to increase affordable and cost effective means of bringing on board the large numbers of the population that has been excluded from formal financial services for decades. Such a transformation is of interest not only for banks and Mobile financial institutions (MFIs) but also for governments and financial regulators as well as development partners who are providing support to improve the livelihood of African people through poverty reduction and sustained economic growth.

- Boosting domestic savings through expansion of financial services to the poor and rural populations
- Increased money transfers from the diasporas at low costs – e.g., M-PESA IMT.
- Reduction in financial transactions costs, leading to lowering cost of doing business that will benefit SMEs and overall private sector development.
- Increased government revenues as a result increased corporate revenues from booming m-banking, improved corporate earnings, etc.

### ***VII. Conclusion and Policy Recommendation***

Mobile phone usages in sub-Saharan Africa have grown significantly over the past decade and now cover 60 percent of the population. Empirical evidence shows that mobile phones have the potential to benefit consumer and producer welfare, and perhaps broader economic development (Abraham, 2007). Thus there is the need to create more awareness to entice the unbanked people into the banking system. The mobile phone revolution continues to leave larger parts of the continent behind. Low incomes, illiteracy and large signal black spots are key obstacles to the acquisition and use of mobile phones. These obstacles are further aggravated by high taxes, which in some countries such as Tanzania and Uganda can be as high as 30% of overall charges. These challenges can be addressed by the authorities through policy reforms and scaling up investment in the ICT sector. Morseo, Partnership between banks, financial institutions, Mobile financial institutions (MFIs) and the mobile industry players should be sought out and encouraged.

In order to sustain the growth of these success stories in these countries and the rest of African countries, there is need to support a single integrated framework (between financial institutions and mobile industry) to cut costs in order to provide consumers with the convenience of banking from home, the farm or other remote areas. MFIs should upgrade their technology to be able to adopt the new mobile banking emerging technology and should seek solutions that are user friendly and easy to implement. The increased access to cell phones by the unbanked Africans would be the most cost-effective and economically efficient method of providing financial services to a wide segment of the African populations in the very near future.

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