

Mobile Banking Influence on Wealth Creation for the Unbanked

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Abstract: *The rapid spread of mobile phones means that the number of mobile users may already have exceed the number of banked people in many low income countries. Although previous studies like Sripalawat, Thongmak, and Mgramyarn (2011), have proposed some theoretical models. Unfortunately, these models are not comprehensive nor inclusive of all variables in context of the unbanked, that integrate economic development and poverty eradication. Therefore, this study addressed this knowledge gap by attempting to provide a better understanding of the current trends of m-banking for the unbanked by examining the particular case of a selected unbanked populations in Kenya, and the role of mobile banking in uplifting their lives through wealth creation..*

Keywords: *Mobile, Money, Unbanked, Wealth Creation, Development*

1. INTRODUCTION

Previous studies have argued that the rapid spread of mobile phones means that the number of mobile users may already have exceed the number of banked people in many low income countries (David, 2006). Kenya is one of these countries that have been on the move, and Mobile Banking services and technologies are powerful tools with potential to boost economic growth and poverty reduction for its unbanked citizens. Around the world, many countries like Kenya have deployed various initiatives in the use of the mobile phone to provide financial services to those without access to traditional banks. Yet previous studies have shown that relatively little scholarly research explores the use of these m-banking/m-payments systems (Donner and Tellez 2008). Moreover, studies linking M-banking adoption, use and impact on economic development and wealth creation are even more scares. Like its other facets in Information and communication technology revolution, mobile-banking increase efficiency, provide access financial and banking services, create new opportunities for income generation and improving governance and give poor people a voice. Taking into account developing world's complexity and diversity, specific interventions are required rather than "one-size-fits-all" approaches in leveraging M-banking for the unbanked. Isolated deployments of M-banking by investment banks and ICT companies do not per-met leapfrogging to higher economic growth rates or even equitable access to financial services by the unbanked. On the contrary it may end up exploiting the poor and unbanked while banks and IT companies reap billions of profits. Consequently there is a need for every country that want to use m-banking to improve economic development and wealth creation to develop a informed M-banking development strategy, for main-streaming Mobile Banking services in the productive sectors as a matter of economic survival.

Globally, various initiatives use the mobile phone to provide financial services to those with or without access to traditional banks (Anyasi and Otubu, 2009). In Kenya, M-banking has been introduced now for almost five years. However, there has been scanty research on its economic development and poverty

eradication impact on the unbanked. This paper therefore investigates vividly the use of mobile phone in the banking industry, its influence on economic implications, and in general a systematic look into the various forms of mobile banking with emphasis on their contribution to poverty reduction on citizens especially the unbanked. The main question that was to be answered by this study was: Does M-banking adoption, use have a positive influence on economic development and poverty reduction for the unbanked?

1.1 Mobile Money In Kenya

The potential of mobile phones to revolutionize access to financial services in developing countries is exemplified powerfully by the success of the M-Pesa mobile money service in Kenya (Lonie 2010). However, the apparent difficulty of replicating M-Pesa's success even in neighboring countries suggests that some contexts may be more receptive to such an innovation than others. Moreover, this is an indication that the influence of m-banking in economic development and poverty alleviation in different contexts may have different results. In this paper we do not only seek to understand the Kenyan citizens environmental dynamics affecting the uptake of mobile money, but more importantly the effect of this uptake to their economic development and poverty alleviation. While Amrik and Ignacio,(2009). have demonstrate that, aside from strong strategy and good bank business models, the impact of financial services in developing countries is dependent on the extent of market penetration and the political environments in which they take root, there is a knowledge gap on the extent mobile money impact economic development and wealth creation.

2. OBJECTIVES

The research question was answered by pursuing the following research objectives:

1. To investigate the M-banking services offered by local banks for use and adoption by the unbanked.
2. To investigate factors that influence use and adoption of M-banking by the unbanked
3. To investigate M-banking practices by the unbanked that influence economic development.
4. To investigate M-banking practices by the unbanked that influence poverty reduction.
5. To design a model of M-banking that explains usage and adoption by the unbanked

3. METHODOLOGY

3.1 RESEARCH DESIGN

The research design in this study is descriptive design, quantitative research, and triangulation. Positivists believe that a well-designed test of a theoretically based hypothesis can move us closer to understanding the actual social process and provide internal and external validity in the measure of universal constructs (Mingers, 2003:246). According to Burke (2007), a research design is the arrangement of circumstances for collection and analysis of data in a way that aims to combine both relevance to the research purpose and economy in procedure. In addition to the fact that this research philosophy is positivist, the relevance, purpose, and economy of the methodology adopted for this study was consequently descriptive research design. This is found appropriate because it agrees with the four requirements. The methodology satisfies the philosophy, and the purpose of this study, which is to determine the Factors influencing the m-banking use, adoption, and impacts in Kenya. This design was use a cross-sectional approach taking on a survey method that used a questionnaire for data collection, as well as focus group discussions with various industry players. The prevalent form of triangulation is the association of the

use of both quantitative and qualitative methods in a single research. In this study, a triangulation methodology was adopted. Using a qualitative approach, a review of existing literature on the subject. The use of triangulation method adopted for this study was to increase the validity and reliability of the set of questions and consequently that of the data. Moreover the strengths of qualitative approach was to compensate for the weaknesses of the qualitative approach and vice versa (Amaratunga et al. 2002:23, Mangan et al. 2004:569).

The target population consisted of the unbanked and banked populations in Nairobi, and Nakuru from which the actual sample of villages/estates/slums and that of respondents of individuals, banks, and telecommunication companies was selected from these sites. According to Sekaran, (2003), a sampling frame is an available subset or list of population members used to obtain a sample, which in this case are the villages/estates/slums in Nairobi and Nakuru districts in Kenya. This was obtained from the provincial administrative offices. The sample unit is a single member of the population, which in this study is the individuals.

In this study, rather than use random sampling approach in selecting the villages, a purposive sampling technique was applied to select the participating villages/estates/slums. In addition, Systematic sampling was used to select participating individual in a selected sites. Coopers and Schindler (2006) defined systematic sampling as when the researcher selects every kth element in the population, beginning with a random start of an element in the range of 1 to k. The advantage of this method in this research is the ease of selection of individuals which is likely to form a very large population and therefore simple random sampling was not appropriate with this lot.

The sample size is significant to create the representativeness of the sample for result generalisability (Sekaran, 2003). Roscoe (1975) in Kripanont (2007:133), propose the following rules of thumb for determining the sample size: (i) sample sizes greater than 30 and less than 500 are suitable for most research; (ii) when samples are to be separated into sub-samples, a bare minimum sample size of 30 for each category is necessary; and (iii) in multivariate research, the sample size should be preferably 10 times or more as large as the number of variables in the research. Following this rule of thumb, the sample size of 300 individuals in this research was considered sufficient. The decision of selecting a sample from a two regions or Nairobi and Nakuru aimed to improve control variations and compounding effect across urban and rural folks. Generally, the sample context and attributes in the main study was similar to those of the pilot that was first to be carried out.

3.2.2.4 Sample Selection

There was two levels of sampling. First, that of villages/estates/slums for inclusion in the study. Second, the sampling individuals in the selected sites. The literature for this study shows that there are several methods that are useful in the collection of data for survey studies. These are telephone survey, mail survey, personal interview survey, e-mail survey, and web-based survey. Since each method has its disadvantages and advantages, the process of choosing the right method is guided by the type and size of the sample being researched, available budget and resources, the intention of research, and the time limit. Considering these factors for this study, the survey method using interview survey structured questionnaire to collect data was chosen.

3.3.2.1 Measurement of the Constructs

This section discusses the procedure followed in constructing the items used in the survey instrument. Wherever possible, items used for the development of constructs was adapted from preceding research in order to ensure the content validity of the scale to be used was attained (Luarn and Lin, 2005:873). To assess the internal consistency of each construct, the Cronbach's alpha coefficients was computed to

enable the results reveal that there is adequate reliability where all values was greater than 0.80. The literature review identified four common types of measurement validity namely; (i) nomological validity, (ii) discriminant validity, (iii) convergent validity, and (iv) content validity. These four perspectives of content validity was undertaken in the study process.

3.6 Data Analysis

Before performing factor analysis,(see appendix 1) the study considered the Kaiser-Meyer-Olkin (KMO) and Bartlett's test, the KMO metric for measuring sampling to judge if it is appropriate to use factor analysis on collected data. Also the Bartlett's Test of Sphericity was be significant at probability level 0.05 which was mean that the correlation matrix was not an identity matrix

4. TECHNOLOGY DESCRIPTION- M-BANKING IN KENYA

For almost five years now, payment strategies for emerging markets have been revolutionized by the advent of a simple cell-phone-based payment service in Kenya called M-PESA ("M" for "mobile" and "pesa" for "money") (Lonie, 2010). . From a small-scale pilot program in 2006, M-PESA has become an outstanding success in Kenya; customer response has been unprecedented. Currently, more than 13 million Kenyans use M-PESA to perform tens of millions of transactions every month throughout the country. Although this success has led to new opportunities, it has also brought about many unforeseen challenges Lonie, Susie (2010). It is for this reason that more research into the M-Money phenomena is needed. Recent studies on M-Money have posited a warning or caution, that there is little evidence yet to verify the prospects of serving unbanked through M-banking models and their impact on poverty alleviation (Lonie, 2010).. There is still a monumental gap between the visions and the mundane "financial reality" of poor people in sub-Saharan Africa. The harsh reality is that only 1% of the sub-Saharan population is banked and a substantial part of the rest lives in a cash-based, subsistence, barter-trade economic environment. Relying on GDP per capita data from the region, the majority survives on less than one USD per day, which means there is an extremely small window for savings. The North-South and urban rural divide has created a need for distribution of wealth through remittance; mostly within extended families but also between friends. E.g. even in the most developed economy in Sub-Saharan Africa, South Africa, 45% have nothing remaining when the monthly bills are paid (Finscope, 2005). A second observation is the low reliance on formal employment as a source of income; only 4% in Tanzania has earnings that easily could be transacted through the bank systems (Finscope, 2007). It is this gap that this study wishes to fill.

Previous studies such as Anyasi and Otubu, (2009) posit that Mobile banking services can include service such as the following:

Account information:

- Mini- statement 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 statement
- Insurance policy management
- Pension plan management
- Status on cheque, stop payment on cheque.

Payment and transfers:

- Domestic and international fund transfers
- Micro-payment handling
- Mobile recharging
- Commercial payment processing
- Bill payment processing
- Peer to peer payment

Investment:

- Portfolio management service
- Real-time stock quotes
- Personalized alerts and notification on security prices

Support:

- Status of request for credit including mortgage approval, and insurance Coverage
- check (cheque) book and card requests
- Exchange of data messages and email, including complaint submission and tracking
- ATM location

Content service:

- General information such as weather up dates, news
- Loyalty-related offers
- Location-based services

Source (Anyasi and Otubu, 2009:2).

m-brokerage

- Checking stock prices
- Checking custody account information
- Displaying custody accounts as chart pictures
- Re-ordering or re-selling shares
- Buying shares on the German stock exchanges
- Buying and sell investment trusts
- Subscription for upcoming IPO's
- Checking custody order information
- PIN alteration and TAN lock out for the respective custody account

Source (Scornavacca, Hoehle, 2006).

5. DEVELOPMENTS

There is no universal form of m-banking; rather, purposes and structures vary from country to country. The systems offer a variety of financial services, including micropayments to merchants, bill-payments to utilities, P2P transfers between individuals, and long-distance remittances. Currently, different institutional and business models deliver these systems. According to Porteous (2006) some m-banking services are offered entirely by banks, others entirely by telecommunications providers, and still others involve a partnership between a bank and a telecommunications provider. Most m-banking/m-payments systems in the developing world enable users to do three things: (a) Store value (currency) in an account accessible via the handset. If the user already has *m-banking* a bank account, this is generally a question of linking to a bank account. If the user does not have an account, then the process creates a bank account for her or creates a pseudo bank account, held by a third party or the user's mobile operator. (b) Convert cash in and out of the stored value account. If the account is linked to a bank account, then users can visit banks to cash-in and cash-out. In many cases, users can also visit the GSM providers' retail stores. In the most flexible services, a user can visit a corner kiosk or grocery store, perhaps the same one where he or she purchases airtime, and transact with an independent retailer working as an agent for the transaction system. (c) Transfer stored value between accounts. Users can generally transfer funds between accounts linked to two mobile phones, by using a set of SMS messages (or menu commands) and PIN numbers. In this study we shall explore additional contextual services that are offered on mobile money platform. Moreover we shall investigate whether urban poor and their rural counterparts adopt these services equally.

6. RESULTS

The majority of the respondents were in the age group 25-34 years as shown in Table 1

Table 1: Age distribution of respondents

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid <18	9	6.0	6.0	6.0
18 - 24	32	21.3	21.3	27.3
25 - 34	52	34.7	34.7	62.0
35 - 44	22	14.7	14.7	76.7
45 - 54	18	12.0	12.0	88.7
55 - 64	3	2.0	2.0	90.7
>64	14	9.3	9.3	100.0
Total	150	100.0	100.0	

A first, look at the model summary in Table 2, the R-square value of 0.579 shows the “goodness of fit” of the model. It can be thought of as a percentage. Thus R-square for this model is .579, which means that the predictor variables can explain about 57.9 % of the change/variations in Wealth creation of the unbanked.

Table 2: Model Summary^b

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1	.761 ^a	.579	.544	.73262	.579	16.490	10	120	.000	1.698

a. Predictors: (Constant), SN_A, TC_A, SE_A, MNO_A, PC_A, PR_A, TRUST_A, PU_A, ATA_A, PEOU_A

b. Dependent Variable: WEALTH_A

Further, the Table 3, ANOVA, shows that the model can predict wealth creation of the unbanked using predictor variables. The significance is .000, so we can reject the null hypothesis that “The model has no predictive value.”

Table 3: ANOVA^a

Model	Sum of Squares	df	Mean Square	F	Sig.
1 Regression	88.509	10	8.851	16.490	.000 ^b
Residual	64.408	120	.537		
Total	152.916	130			

a. Dependent Variable: WEALTH_A

b. Predictors: (Constant), SN_A, TC_A, SE_A, MNO_A, PC_A, PR_A, TRUST_A, PU_A, ATA_A, PEOU_A

Finally, the most important table is the coefficients shown in Table 4:. The significance level s of PU_A, TC_A, ATA_A are all <0.05 which indicates that we can reject the null hypotheses that PU_A, TC_A, ATA_A do not predict WEALTH_A. The model is given by Wealth Creation (WEALTH_A) = 1.139+ 0.274*PU_A -0.134*TC_A +0.231*ATA_A+ error

Table 4: Coefficients^a

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	1.139	1.317		.864	.389
PU_A	.274	.063	.416	4.347	.000
TRUST_A	.116	.134	.060	.865	.389
MNO_A	.159	.109	.094	1.458	.147
PR_A	-.159	.096	-.124	-1.663	.099
1 TC_A	-.134	.064	-.135	-2.110	.037
PC_A	-.167	.134	-.094	-1.248	.214
ATA_A	.231	.088	.280	2.617	.010
PEOU_A	.075	.099	.096	.759	.449
SE_A	.080	.060	.084	1.324	.188
SN_A	.059	.106	.049	.554	.581

a. Dependent Variable: WEALTH_A

7. BUSINESS BENEFITS

The study will have benefits to policy makers, mobile network operators, microfinance institutions, banks and development partners as well as the government of Kenya. Additionally researchers will benefit from this insight..

8. CONCLUSIONS

The study has established that , for the unbanked, perceived usefulness of mobile banking plays a major role in uplifting their standards of living through wealth creation. Additionally Technology of mobile banking itself also supports wealthy creation for the unbanked. Further research, may investigate other experiences outside Kenya.

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APPENDIX 1: Rotated Component Matrix^a

	Component								
	1	2	3	4	5	6	7	8	9
PU-1	.773	-.313	.232	.065	-.008	.018	-.157	-.196	-.072
PU-2	.770	-.289	.277	.096	.024	-.016	-.125	-.223	-.087
PEOU-5	.552	-.487	.369	-.114	.194	.138	-.159	.083	.243
PEOU-6	.526	-.579	.375	-.076	.284	.060	-.183	.039	.154
PEOU-7	.581	-.537	.353	-.165	.223	.047	-.206	.026	.100
PEOU-8	.647	-.512	.190	.064	.265	.020	-.154	-.116	.057
ATA-2	.609	-.386	.178	-.095	.233	.042	-.244	-.114	-.026
ATA-3	.661	-.273	.211	-.134	.279	.021	-.024	.187	-.158
WEALTH-1	.600	.094	.108	-.145	.411	.033	.127	.156	.064
WEALTH-2	.776	.081	-.042	-.118	.077	.008	.389	.228	.131
WEALTH-3	.793	-.043	.017	-.024	.053	.086	.359	.202	.102
WEALTH-4	.767	-.179	-.060	-.102	-.132	.047	-.236	-.187	-.150
WEALTH-5	.775	-.175	-.112	-.009	.193	.008	-.001	.067	-.066
WEALTH-6	.843	-.077	.065	-.063	.217	.035	.035	.093	-.047
SN-1	-.189	.851	.245	-.032	.028	.080	.046	.090	.055
SN-2	-.178	.874	.163	-.107	-.065	.057	.036	-.051	.091
SN-3	-.179	.866	.159	-.157	-.074	.105	.151	-.013	.001
SN-4	-.184	.856	.084	-.100	-.065	.139	.024	-.124	.245
PC-1	.378	-.095	.775	.034	.101	.121	-.057	.004	-.098
PC-2	.082	.038	.876	-.121	.080	.025	.066	.033	.016
PC-3	.148	.195	.750	-.080	.046	-.070	.324	-.096	.045
PC-4	-.066	.353	.738	-.037	.098	.028	.164	.077	.045
TC-1	-.018	-.182	-.054	.921	.016	.094	-.036	-.012	.011
TC-2	-.126	.109	-.106	.892	.018	-.001	.033	.019	.070
TC-3	-.085	-.174	-.030	.931	.026	.060	-.004	.001	-.043
PR-2	-.343	.092	-.146	-.157	-.700	-.040	.110	.092	.110
PR-3	-.377	.245	-.169	-.068	-.624	-.022	.128	.158	.096
PR-4	-.112	.059	-.028	.045	-.862	-.025	-.128	-.027	.049
MNO-1	.088	-.005	.082	.100	-.020	.918	.092	-.058	.000
MNO-2	.101	.015	.028	.087	.083	.941	.029	.022	-.001
MNO-3	-.037	.395	-.028	-.054	.016	.700	.204	.009	.024
TRUST-1	.048	.215	.337	-.064	-.022	.235	.639	-.104	-.142
TRUST-2	-.066	.078	.159	.045	.007	.144	.824	-.199	.002
SE-2	.240	-.167	.087	-.001	-.055	-.040	-.312	.757	-.065
SE-3	-.222	.500	-.155	.048	-.338	.005	-.123	.519	-.081
AVAIL-1	-.133	.182	.093	.081	-.038	.004	.092	.106	.708
AVAIL-3	-.082	.020	.120	.058	.177	-.006	.246	.325	-.688

Extraction Method: Principal Component Analysis.

a. Rotation converged in 11 iterations.