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The Role of Mobile Money Transaction Costs on Savings Mobilization of Boda-Boda Youths in Wote Town, Makueni County

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Abstract: *With mobile money adoption, financial services have become available to youths through mobile channels. This has enabled youths to meet many day-to-day financial transaction needs using a mobile phone. Although Kenya has undergone extensive financial reforms in the last two decades, its financial sectors remain under-developed relative to the standards of industrial economies. A recent global database shows that financial exclusion is more pronounced in Kenya especially among the youths. According to FSD-K only one in five youths has a bank account with a financial institution. Further from the study 73% of youths own a mobile phone. The general objective of this study was to determine the role of mobile money transaction costs on savings mobilization of boda-boda youths in Wote town. The study used a descriptive survey design. The study targeted a population size of 16,621 and a sample size of 384 boda-boda youths in Wote town. The study used primary data. Data was collected using a questionnaire. The data was analyzed using descriptive statistics for frequency and percentages, Pearson correlation analysis and chi-square analysis to summarize and classify data, to establish the relationship between the variables and to determine the strength of association between the variables respectively. The study established that mobile money transaction costs are an important influence on savings mobilization of boda-boda youths (r = 0.388, P-value = 0.000). The null hypothesis was tested using Chi-square analysis, where it was rejected based on the Chi-square values. There was perception from the respondents that savings mobilization of boda-boda youths was influenced by mobile money transaction costs. The study therefore concluded that for effective savings mobilization among boda-boda youths mobile money providers should consider offering affordable mobile money transaction. The study recommends that for effective savings mobilization among boda-boda youths, mobile money providers should enhance savings mobilization by offering mobile money services at more affordable costs.*

Keywords: *Mobile Money Transaction Costs and Savings Mobilization*.

1.1 Introduction

Mobile money is a term used for performing banking transactions via mobile device (Anyasi & Otubu, 2009). Tiwari, Buse and Herstatt (2006) define mobile money as the provision of bank-related financial services with the help of mobile telecommunication devices. The scope of offered services include depositing money to a mobile account, facilities to conduct bank and stock market transactions and to access customized information from commercial banks. Over the past few years, advancement in information technology has changed the way organizations operate and conduct their business (Al-Jabri, 2012). Technological advancement has brought about the evolution of mobile banking in the banking industry which has revolutionized the manner in which commercial banks conduct their business. Mobile money has not only made financial organization provide banking services online and via mobile but has also provided customer with easy access to financial services and other benefits. The greatest opportunity to make progress on savings mobilization in developing and emerging countries is provided by new technology channels, in particular mobile technology. Globally, out of 2.5 billion people who are still denied access to the financial system, there are 1.7 billion people who have mobile phones. These people can use mobile phones for remote communication, but still have to deposit and transfer value through tangible assets. Mobile money is the most cost-effective way to extend the reach of formal financial services, nonetheless its potential to achieve savings mobilization is yet to be realized. Yet savings is a key aspect of development, as credit and savings allow households to invest, save and respond to shocks (Anyasi & Otubu, 2009). Since 2005, mobile money has become available in over eighty countries worldwide. Mobile money is a product that allows clients to use text messages to store value in an account accessible by the handset, convert cash in and out of the stored value account, and transfer value between users (Aker & Mbiti, 2010). As compared to the traditional means of sending and receiving money within many developing countries, such as Western Union and MoneyGram, the postal service or delivery by friends or family, mobile money substantially reduces the costs of transferring money (Jack & Suri, 2012). According to Fin Access report (2019), 66.7% of adults accessed financial services from any type of formal financial provider in 2019 compared to 27.4% in 2006 and 41.3% in 2009.

1.1.1 Savings Mobilization

Access to and use of quality financial services by households and firms is of increasing concern to policy makers across Africa. Although most African countries have undergone extensive financial reforms in the last two decades, their financial sectors remain

under-developed relative to the standards of industrial economies or even other developing countries (Alter & Yontcheva, 2015). A recent global database shows that financial exclusion is more pronounced in Sub-Saharan Africa where less than one in five households has access to formal financial services (Demirguc-Kunt et al., 2015). This research investigates savings mobilization in Kenya through mobile money deposits. Significant improvements have been made in Kenya where Fin-Access data 2016 and Fin-Scope data 2013 show that access to formal financial system stands at 75 percent. Despite the significant increase in access to financial services, savings mobilization remains low. A vast majority of small-scale savers continue to be deprived of affordable savings mechanisms in the financial system (Donkor & Duah 2013).

The growth of any economy depends on capital accumulation, which in turn depends on investment and an equivalent amount of savings to match it. Two key issues for developing countries are how to stimulate investment and increase the level of saving to fund increased investment. To gain a strong understanding of Kenya's practices, a survey was conducted by Fin- Access, to clearly indicate the accessibility, affordability and usage of financial instruments in the country. The survey revealed that 75 percent of Kenyans adults are financially included -42 percent are formally served (22.8 percent by commercial banks and 19.2 percent by nonbank formal institutions and 58 percent use formal financial mechanisms. This is a great leap when compared to 2008 where more than half (52 percent) of Kenyans adults were financially excluded. (Fin-Scope, 2012).

Ultimately the goal of financial sector development and increased financial inclusion in Kenya is to improve the lives of Kenyans. The premise is that access to secure savings products and other financial services will better enable the poor to build financial security, manage financial shocks, and invest in education, health, housing and income generating opportunities, the cumulative role being poverty reduction through greater participation in economic activities (Fin-Scope, 2012).

1.2 Statement of the Problem

With mobile phone adoption, financial services have become available to youths through a mobile channel. Mobile financial service features now exist that enable consumers to meet many day-to-day transaction needs using a mobile phone, including depositing money to a mobile account, monitoring account balances and paying bills. In addition, mobile technology enables consumers to conduct these transactions more conveniently and quickly than through other channels. As a result, access to and use of mobile financial services by both households and firms is of increasing concern to policy makers in Kenya. Although Kenya has undergone extensive financial reforms in the last two decades, its financial sectors remain under-developed relative to the standards of industrial economies. A recent global database shows that financial exclusion is more pronounced in Kenya especially among the youths, where approximately one in five youths has access to formal financial services. The level of domestic savings among the youths has remained low despite concerted efforts aimed at addressing this situation. On the other hand, access to credit by youths from formal financial institutions is at 10 percent in Kenya. These low levels of credit among the youths are not desirable if meaningful growth targets envisaged in the Kenya Vision 2030 are to be achieved. Since a report by the Kenya National Bureau of Statistics indicated that 80% of youths in Wote town engage in boda-boda business, it was imperative to examine the role of Mobile money transaction costs on savings mobilization of boda-boda youths in Wote town.

1.3 Research Objective

To determine the role of mobile money transaction costs on savings mobilization of boda-boda youths in Wote town.

1.4 Research Hypothesis

H_0: There is no association between mobile money transaction costs and savings mobilization of boda-boda youths in Wote town.

1.5 Significance of the Study

The study will be of great importance to the financial sector as it will demonstrate the role of mobile money transaction costs on savings mobilization of the youths. The study will highlight the potential influence of adopting mobile to reach the unbanked and offer diversified and competitive saving products with minimal costs and risks. The study will guide the government and regulators with the understanding of importance of proper and supportive regulatory framework, legislations and additional control procedures needed in the mobile money industry towards operational and systemic risks that may arise from the use of the new technology.

2.1 Theoretical Framework

The theoretical foundation for this study was anchored on Diffusion of Innovation theory.

2.1.1 Diffusion of Innovation Theory

Diffusion of innovations theory was postulated by Everett Rogers in 1962. The theory seeks to explain how, why, and at what rate new ideas and technology spreads. According to Rogers (2003) diffusion is the process by which an innovation is communicated over time among the participants in a social system. Rogers (2003) further argues that diffusion determines the uptake of new technologies. He suggested five attributes in the Theory of Innovation. The first attribute, Relative advantage, indicates the extent of technological innovation over previous innovations. These benefits can be seen from the viewpoint of technical, economic, prestige, comfort and satisfaction. If people feel that a technological innovation provides high relative advantage, then they will accept the

technology. The second attribute, compatibility is the suitability of a technological innovation with the user value, user experience, and user needs. According to Rogers (2003) the third attribute, complexity refers to the level of complexity of understanding and use of a technological innovation. The more complex and sophisticated the technology innovation, the more difficult it is to be embraced. Rodgers (2003) further explains that the fourth attribute, trial-ability is the degree to which a technological innovation can be tried and tested. The last attribute is observability. This attribute is related to the extent to which the results of technological innovations can be observed and communicated. Diffusion of innovation theory further argues that uptake of a new idea, behavior, product or innovation does not happen simultaneously in a social system; rather it is a process whereby some people take on the innovation earlier than others. There are five established new user categories. These include innovators, early users', early majority, late users', and laggards. Studies have found that the early users of technology have different characteristics than the late users. This theory has been used to explain how mobile money model has penetrated within the Kenyan financial industry (Dias & Mc Kee, 2010). Relating diffusion theory to mobile money, the mobile money is clearly an innovation that requires time to reach critical mass. With regard to communication channels, commercial banks and telecommunication companies have done well to popularize the model with service names that resonate well with the target population. A review of literature indicates that the use of mobile money model was not uniform in the financial sector. In the last fourteen years' mobile money has been adopted by different financial players at different times in the Kenyan financial sector.

2.2 Conceptual Framework

The study was guided by a conceptual framework. The conceptual framework contained one independent variable and one dependent variable (see Figure 2.1).

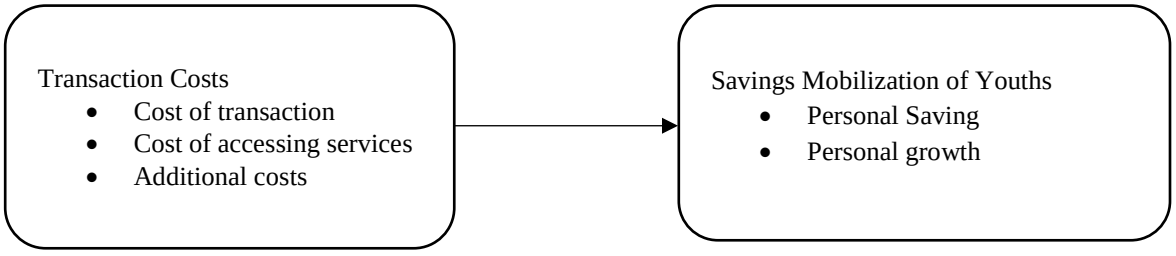

Figure 2.1 Conceptual Framework

2.2.1 Mobile Money Transaction Costs and Savings Mobilization of Boda-boda Youths

Since 2007, commercial banks, payment system providers, and mobile operators begun experimenting with branchless banking models which reduce costs by taking transactions out of banking halls into local retail shops, where agents such as airtime vendors, gas stations, and shopkeepers, register new accounts, accept client deposits, process transfers, and issue withdrawals using a client's mobile phone then communicate transaction information back to the telecommunication provider or bank. This enables clients to send and receive electronic money wherever they have cell coverage. They need to visit a retail agent only for transactions that involve depositing or withdrawing cash (Salzaman, Palen & Harper, 2001). The study will collect data on the transaction cost of mobile money transactions undertaken by selected commercial banks and telecommunication companies and investigate their role on mobilization of savings by boda-boda youths in Wote town.

3.1 Research Methodology

This section presents the research methodology used in the study.

3.2 Research Design

The research used descriptive survey design.

3.3 Target Population

The target population for this study consisted of boda-boda youths between 18 years and 35 years in Wote town in Makueni county. The total population of boda-boda youths between 18 years and 35 years in Wote town was 16,621 (KNBS, 2019).

Table 3.1: Total Population of Boda-boda Youths in Wote Town

Age	Population
18 – 19	2945
20 – 24	4952
25 – 29	3901

30 – 34	3897
35	926
Total	**16,621**

3.4 Sample and Sampling Techniques
The researcher had five heterogeneous stratums from the youth population. From each of the stratums the researcher used random sampling to get a sample size of 384.

3.5 Research Instrument
In this study, primary data was used. Primary data was collected through the administration of semi-structured questionnaire to the boda-boda youths in Wote town in Makueni county.

3.6 Data Analysis Procedures
After successive data collection, the collected was organized for processing. This involved; coding the responses, tabulating the data and performing several statistical computations. The study employed both descriptive and inferential statistics to analyse the data collected and organized. Descriptive and inferential statistics was used. Descriptive statistics; Frequencies and Percentages was calculated on the independent variables to summarize and classifying the data collected into meaningful form for easy interpretation. Inferential statistics; Factor Analysis, Correlation analysis, Chi-Square, and Pearson Correlation Coefficient test was used to reduce the factors using factor loading, determine relationships between independent and dependent variable, check the normality of variables, and make generalizations about the characteristics of populations based on data collected.

3.7 Parametric Tests
In this study parametric tests were used to estimate the population parameter, because this estimation process involved a population, certain parametric assumptions were required to ensure all components were compatible with each other. It's used where the following three assumptions have been observed: Observations are independent, where the population data has a normal distribution and Scores in different groups have homogeneous variances. In this study the following parametric tests were used.

3.7.1 Correlation Analysis
Correlation analysis was used to find out relationships between Variables. Using Pearson Correlation Coefficient, the study expressed the extent to which the variables were related. Product Moment Coefficient (r) gives an indication of the strength of the linear relationship between two variables.

$$r = \frac{n\sum xy - \sum x \sum y}{\sqrt{n\sum x^2 - \left(\sum x\right)^2} \times \sqrt{n\sum y^2 - \left(\sum y\right)^2}}$$

3.8 Non-Parametric Tests
The study used this method to test Distribution free statistics that do not require that the data fit a normal distribution. It also requires less restrictive assumptions about the data. Another important reason for using these tests is that they allow for the analysis of categorical as well as rank data. For this study the Chi – square test of independence was used. This test is used to determine whether there is a significance difference between the expected observations and the observed frequencies in one or more categories. Pearson's correlation was used to test the independence while the Phi and Cramer's V. was used to test the strength of the association between variables. To make a conclusion about the hypothesis with 95% confidence, the value of significance, that is the *p*-value of the Chi-Square statistic should be less than .05 (which is the alpha level associated with a 95% confidence level). If the *p*-value < .05 and the critical chi square value is less than the computed value, then it is concluded that the variables are dependent in the population and that there is a statistical relationship between the categorical variables.

Chi – square formula

$$\chi^2 = \sum \frac{(O-E)^2}{E}$$

Where O = observed frequency

$$E = \frac{\text{Column total} \times \text{Row total}}{\text{Sample Size}} = \text{expected frequency}$$

4.1 Research Findings and Discussions

This section presents the research findings and discussion.

4.1.1 Role of Mobile Money Transaction Costs on Savings Mobilization of Boda-boda Youths in Wote Town

The second objective of the study sought to establish the role of transaction costs on savings mobilization of boda-boda youths in Wote town. The respondents were asked to show their degree of agreement or disagreement with given statements on transaction costs on a five-point scale of 1-5, where; 1-Strongly Disagree, 2-Disagree, 3-Undecided, 4-Agree, 5- Strongly Agree. Descriptive statistics were calculated and the results are presented in Table 4.1.

Table 4.1: Descriptive Statistics for Transaction Costs

Statements	SA (%)	A (%)	UN (%)	D (%)	SD (%)	Total (%)
I am comfortable using Mobile money transfer because it is affordable	171 (54%)	84 (27%)	30 (10%)	12 (4%)	18 (6%)	315 (100%)
I transact daily using mobile money because is affordable	124 (39%)	185 (59%)	0 (0%)	0 (0%)	6 (2%)	315 (100%)
I borrow loans from mobile money because interest rates are affordable.	167 (53%)	142 (45%)	0 (0%)	6 (2%)	0 (0%)	315 (100%)
I prefer mobile money because I access my account without having to travel to banking hall	190 (60%)	119 (38%)	0 (0%)	0 (0%)	6 (2%)	315 (100%)
I limit myself to a number of mobile money transactions in a day to avoid high transaction costs.	184 (58%)	103 (33%)	22 (7%)	0 (0%)	6 (2%)	315 (100%)

Key: SA=Strongly Agree; A=Agree; UN=Undecided; D=Disagree; SD=Strongly Disagree

The results in Table 4.1 show that 84(27%) of boda-boda youths agreed, 30(10%) were undecided, 12(4%) disagreed, 18(6%) strongly disagreed and 171(54%) strongly agreed that they are comfortable using mobile money transfer because it is affordable. On whether boda-boda youths transact daily using mobile money because it is affordable, 124(39%) of boda-boda youths strongly agreed, 0(0%) were undecided, 0(0%) disagreed, 6(2%) strongly disagreed and 185(59%) agreed with the statement. This indicates that majority of boda-boda youths are able to access their savings account on a daily basis because it is more convenient and affordable. This affirms Munga (2010) that M-Pesa had a big impact on the Kenyans lives both socially and economically. On whether boda-boda youths request loans from mobile money because interest rates are affordable, 142(45%) of boda-boda youths agreed, 0(0%) were undecided, 6(2%) disagreed, 0(0%) strongly disagreed and 167(53%) strongly agreed to the statement. This also indicates that boda-boda youths use mobile money to access loan facilities. This agreed with Gitaharie et al. (2014) that the probability of a household to access credit for businesses from mobile money was influenced by interest-related factors. On whether boda-boda youths prefer mobile money because they access their bank account without having to travel to banking hall, 119(38%) of boda-boda youths agreed, 0(0%) were undecided, 0(0%) disagreed, 6(2%) strongly disagreed and 190(60%) strongly agreed to the statement. This indicates that through efficiency mobile money has positive impact on savings mobilization of boda-boda youths. This is in consonance with Munga (2010) that M-Pesa had a big impact on the Kenyans lives both socially and economically. Finally, on whether boda-boda youths limit themselves to a number of mobile money transactions in a day to avoid high transaction costs, 103(33%) of boda-boda youths agreed, 22(7%) were undecided, 0(0%) disagreed, 6(2%) strongly disagreed and 184(58%) strongly agreed to the statement. This indicates that through mobile money boda-boda youths are able to manage the cost savings by limiting the number of transactions through mobile money, this could be achieved through bulky transactions at any given time. This is in agreement with Ike and Umuedafe (2013) that the volume of savings in Nigeria among rural farmers was determined by the amount of income obtained from farming and transaction costs.

The data was subjected to further analysis using Pearson's Correlation so as to establish whether there exists any relationship between transaction costs and savings mobilization of Boda-boda youths in Wote town. The results are presented in Table 4.2.

Table 4.2: Pearson's Correlation Analysis of the Relationship between Transaction Costs and Savings Mobilization

		Saving
Transaction Costs	Pearson Correlation	.388**
	Sig. (2-tailed)	.000
	N	315

**. Correlation is significant at the 0.01 level (2-tailed).

The results in Table 4.2 show that there is a low positive and statistically significant correlation (r = 0.388, P-value = 0.000) between transaction costs and savings mobilization of boda-boda youths in Wote town. This signifies that transaction cost is an important influence on savings mobilization of boda-boda youths in Wote town. This is coherent with Ike and Umuedafe (2013) that the volume of savings in Nigeria among rural farmers was determined by the amount of income obtained from farming and transaction costs.

The study further sought to establish the strength of the association between transaction costs and savings mobilization of boda-boda youths in Wote town. This was guided by the null hypothesis two which was stated as:

H_{o2}: *There is no association between transaction costs and savings mobilization of boda-boda youths in Wote town.*
The analysis was conducted using Chi-square test of independence and the results are presented in Table 4.3.

Table 4.3: Chi-square Test for Independence for Transaction Costs and Savings Mobilization

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	1076.739[a]	96	.000
Likelihood Ratio	469.828	96	.000
Linear-by-Linear Association	47.351	1	.000
N of Valid Cases	315		

The results in Table 4.3 show that there is an association between transaction costs and savings mobilization of boda-boda youths in Wote town. This relationship was significant since the Chi-square value was 1076.739 which was greater than the critical Chi-square value and the P-value was less than 0.05 and hence the null hypothesis that there is no association between transaction costs and savings mobilization of boda-boda youths in Wote town was rejected. The study thus concluded that transaction costs were significant factor influencing savings mobilization of boda-boda youths in Wote town. This agreed with Ike and Umuedafe (2013) that the volume of savings in Nigeria among rural farmers was determined by the amount of income obtained from farming and transaction costs.

5.1 Conclusion
The study concluded that mobile money transaction costs have influence on saving mobilization of boda-boda youths in Wote town. For effective savings mobilization among boda-boda youths transaction costs should be considered.

5.2 Recommendation
The study recommends that mobile money providers should consider offering affordable mobile money services as this has been seen to have a positive influence on savings mobilization among boda-boda youths.

5.3 Areas for Further Study
This study was limited to savings mobilization among boda-boda youths and therefore the results should not be generalized to other sectors and population. Therefore, a similar study incorporating other sectors should be conducted to establish the relationship between different sectors. The study also recommends that a similar study be carried out targeting the entire population working in the transport sector.

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