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The Effect of Mobile Money Services Usage on Financial Inclusion in Nyamigamba Village

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Abstract
The study was an attempt to analyze the effect of mobile money services usage on financial inclusion in Nyamigamba village located in Kwimba district, Mwanza region, Tanzania. Specifically, the study intended to show (i) the relationship between mobile money transfer service and financial inclusion, (ii) relationship between mobile money payment service and financial inclusion, (iii) the relationship between mobile money receiving service and financial inclusion and (iv) show the relationship between mobile money loan service and financial inclusion. The study used the mixed approach and two research designs, the sequential explanatory design and the causal research design. Primary cross sectional data obtained through a questionnaire and focus group discussion were used. The dependent variable was financial inclusion index developed as composite financial inclusion indicator comprising of three dimensions of access, usage and availability. The independent variables were mobile money services, including mobile money transfer service, mobile money payment service, mobile money receiving service and mobile money loan service. These were measured by the frequency of usage within a month per head of household. The findings suggest that the measures of mobile money services usage dimension have significant effect on financial inclusion. Moreover, the study also revealed that mobile money loan had a negative influence on financial inclusion which is against theoretical expectations. Further, the study findings revealed that in Nyamigamba village, the financial inclusion of the heads of household is attributed by their education level and employment status. Thus, the study recommends on increased education and awareness on mobile financial services and increased efforts on promoting self-employment as it was seen as an important issue that influence financial inclusion in the area under study.

Keywords: Financial Exclusion, Financial Inclusion, Mobile Money Services

1. INTRODUCTION

Financial inclusion facilitate easy access to usage of financial services and products to individuals who are financially excluded in the mainstream of financial system(BOT, 2023). The global financial inclusion agenda emerged in the wake of 2008, whereby it was aimed at promoting access to financial services and products for every individual in the world, this included transactions, payments, savings, credit and insurance delivered in a sustainable way to every individual (Girard, 2021). Moreover, several strategies were initiated in Tanzania such as development of different policies example the microfinance policy of 2000, small and medium enterprise development policy of 2003 and other policies which aimed at expanding the financial services to the low income segment population living in both rural and urban areas (BOT, 2023). With such vision, there were some achievements as reported by the Bank of Tanzania that, there were an increase in percentage of adults who had access to formal financial service from 86 percent in 2017 to 89 percent in 2023, but also there were an increase in usage of formal financial services from 65 percent in 2017 to 76 percent in 2023 (BOT, 2023).

With increased growth in financial sector that led to increased role in provision of financial services to customers, several institutions such as the mobile network operators, introduced the mobile money services in 2008 which aimed at providing financial services especially to the unbanked population. The mobile money services usage benefited large population of the Tanzanians due to the increased mobile payment platforms such as Vodacom M-pesa, Tigo-pesa, Airtelmoney, Halo-Pesa, Ezypesa and T-pesa. As a result, mobile money services was seen as an alternative way to make people financially included apart from the traditional banking system (TCRA, 2016).

Despite such achievements, there were different challenges that faced the improvement of financial inclusion, the challenges included low access to credit, low level of financial literacy and consumer protection, lack of appropriate market infrastructures, and high costs of financial services and increase financial crimes conducted through mobile money platforms(BOT, 2023; TCRA, 2016). With those challenges, it was seen that mobile money services usage have less effect on financial inclusion especially in rural areas thus, this study focused on analyzing the effect of mobile money services usage on financial inclusion in rural Mwanza region specifically Nyamigamba village.

2. LITERATURE REVIEW

This study was guided by different theories but also it was supported by different empirical literature reviews. Different theories such as the institutional theory which explained how the formal and the informal structures influenced social behavior. The theory explained that if individual interact with financial institutions then it is likely for that individual to be financially included or not to be included. Therefore, constant interactions with the mobile money services advertisement through the mobile money platforms will either make an individual financially included or not depending on individual's decision Ozili (2023). But also the study was guided by the financial literacy theory of financial inclusion which aimed at emphasizing on education provision especially to people living in rural areas about financial services issues and giving them awareness on how to use the services including the mobile money services which will influence them to be financially included Ozili (2020).

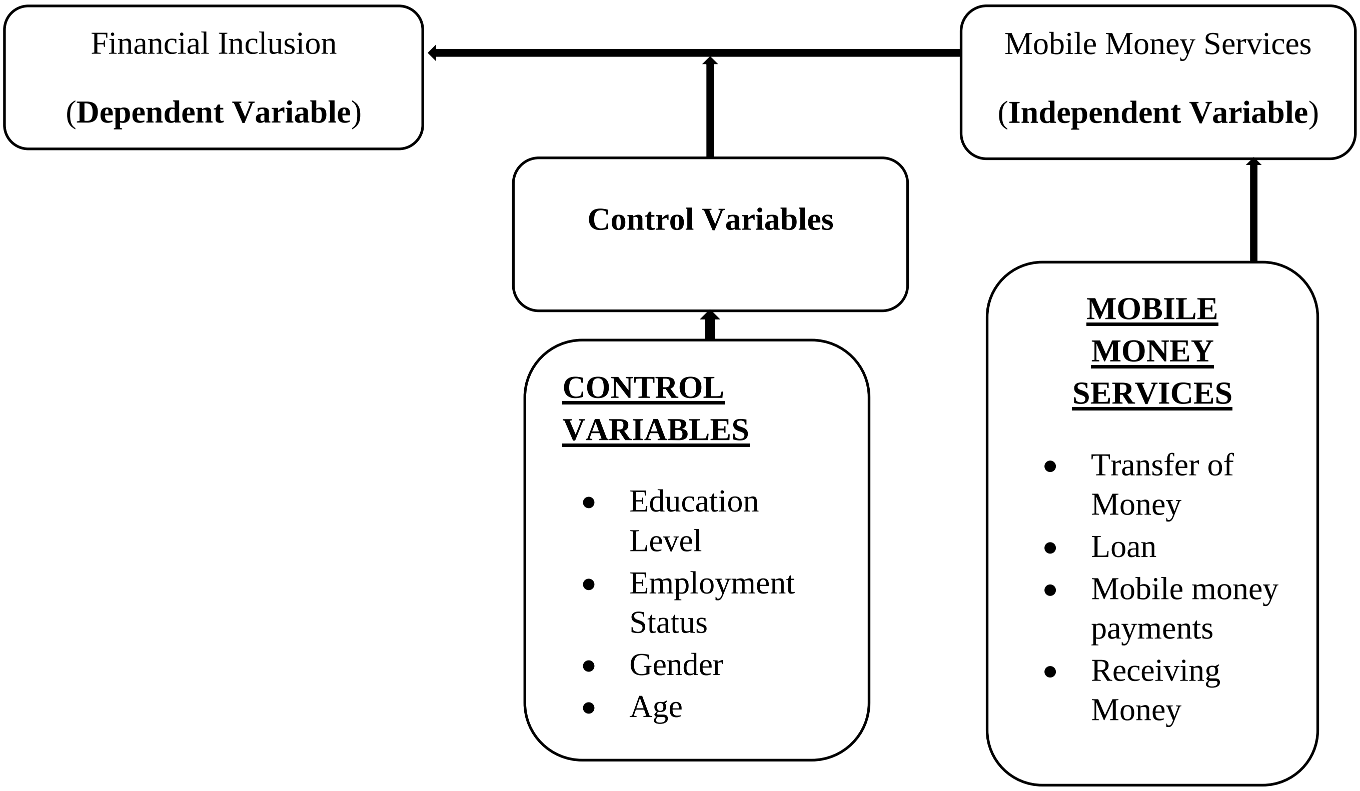
Moreover, the study was guided by different empirical literature reviews such as Bongomin et al. (2017), who concluded on their study that, mobile money services usage had positive effect on financial inclusion. But also, Mhella (2019), concluded that mobile money services usage had positive effect on financial inclusion. Mohamed and Nor (2021), concluded that mobile money service usage had contributed to financial inclusion.

3. METHODOLOGY

The study used the mixed approach whereby it employed sequential explanatory design and causal research design. The sequential explanatory design had two parts, the first part was about the collection of the quantitative primary information to be used in analysis which was done through administering of the questionnaires to the heads of household and the second part was the collection of the qualitative information that will supplement more information to the quantitative data collected, this was done through the focused group discussion (Creswell, 2009) and the second design was the causal research design that intended to show the effect of change in independent variable to the dependent variable

(Salkind, 2010). The study used the sample of 185 heads of households that was calculated using the Yamane formula for sample size calculation that was obtained from (Singh & Masuku, 2014).

Figure 1: Conceptual Framework of the Study



From the conceptual framework, the dependent variable was the financial inclusion that was measured basing on three dimensions which were access, usage and availability. Together, the three dimensions were used to formulate the composite financial inclusion index as it was done by (Omar & Inaba, 2020). The independent variables were the mobile money services that were measured basing on their frequency of usage within a month by the head of household. While, there were other variables that were known as the control variables, that influenced effect on the financial inclusion, the control variables were education level, employment status, gender and age.

According to the institutional theory, it showed that financial inclusion of an individual depend upon interaction of the individual towards formal or informal financial institutions. Thus, interaction of the head of household on mobile money services will make the head of household to be financially included. Therefore, all mobile money services have positive effect on financial inclusion.

Econometric Model

$$FI_i = \beta_0 + \beta_1 MMT_i + \beta_2 MMR_i + \beta_3 MMP_i + \beta_4 MML_i + \beta_5 DGENDER_i + \beta_6 EDU_i + \beta_7 DEMP_i + \beta_8 Age_i + \varepsilon_i \dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots..(i)$$

Where;

β	represents parameters
FI	represent Financial Inclusion
MMT	represent Mobile Money Transfer
MMR	represent Mobile Money Receiving

MMP	represent Mobile Money Payments
MML	represent Mobile Money Loan
EDU	represent Education Level
DEMP	represent Dummy variable for Employment Status
DGENDER	represent Dummy variable for Gender
ε	represent Error Term
i	represent individual

The above was the multiple linear regression model.

This study involved both pre-estimation tests, regression analysis and post-estimation test on the estimation methods but also the study made carefully considerations on ethical matters during data collection and after data collection.

4. FINDINGS

Consider the regression analysis table 1 below that showed the effect one independent variable over the dependent variable.

Table 1: Regression Analysis Results

Source	SS	df	MS	Number of obs	=	185
Model Residual	12.9895345 7.95462855	8 176	1.62369181 0.045196753	F(8,176) Prob>F	= =	35.92 0.0000
Total	20.9441631	184	0.113826973	R-squared Adj R-squared	= =	0.6202 0.6029
				Root MSE	=	0.2126

Fi	Coefficient	Std. Error	T	P>/t/	95% Coef.	Interval
Mmt	0.176	0.0318264	5.52	0.000	0.1129025	0.2385236
Mmr	0.156	0.0207778	7.52	0.000	0.1152103	0.1972216
Mmp	0.014	0.0158908	0.87	0.387	-0.0175945	0.0451277
Mml	-0.144	0.0402645	-3.57	0.000	-0.2233892	-0.0644624
DMALE	0.036	0.034963	1.03	0.304	-0.0329474	0.1050539
Edu	0.010	0.0049395	2.08	0.034	0.0005427	0.0200391
DEMP	0.229	0.06786	3.37	0.001	0.0947772	0.3626251
Age	0.0003	0.0014669	0.18	0.860	-0.0026363	0.0031537
_cons	0.126	0.1069726	1.18	0.240	-0.084931	0.3372973

Estimated Model:

$$\boldsymbol{FI_i = 0.126 + 0.176\ MMT_i + 0.156\ MMR_i + 0.014\ MMP_i - 0.144\ MML_i + 0.010\ EDU_i + 0.036\ DMALE_i + 0.229\ DEMP_i + 0.0003\ Age_i}$$

From the regression results, it is seen that not all mobile money services usage had significant effect on financial inclusion to the heads of households in Nyamigmaba village but only mobile money transfer service, mobile money receiving services and mobile money loan service were found significant. However, mobile money loan service had unexpected outcome as it yielded negative effect on financial inclusion this was due to most individuals not to use financial services through their phones after they have acquired loan. But also, in Nyamigamba village it was found that education level and employment status of the head of household had positive significant effect on financial inclusion.

5. CONCLUSION AND RECOMMENDATIONS

CONCLUSION

The study concluded that, the usage of mobile money services that included mobile money transfer service, mobile money receiving service and mobile money loan service in Nyamigamba village by the head of household had significant effect on financial inclusion. But also, the education level and the employment status of the head of household in Nyamigamba village had significant effect on financial inclusion.

RECOMMENDATIONS

The study recommends policies towards increasing education/awareness on mobile financial services. Government should enhance availability of infrastructure that facilitate mobile money usage, access and availability by putting in place policies that encourage private investment in rural areas. Moreover, the government should promote self-employment and education facilities as they are seen to influence mobile money use and financial inclusion.

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