DIGITAL TECHNOLOGIES AND FINANCIAL PERFORMANCE OF DEPOSIT TAKING MICROFINANCE INSTITUTIONS IN KENYA

Phyllis Kinyanjui ✉

JKUAT, Kenya

phylliskinyajui@gmail.com

Peter Ngatia

JKUAT, Kenya

Abstract

This study sought to evaluate the digital technologies and the financial performance of deposit taking microfinance institutions in Kenya. The specific objectives of the study were to: determine the influence of; Mobile banking, internet banking, Automated Teller Machines, Agent banking on growth of financial performance of deposit taking microfinance institutions in Kenya. The study was guided by The Technology Acceptance Model (TAM), Diffusion of Innovation Theory, and the Agency theory. The study used both primary data and secondary data that were obtained from the respective companies' historical financial reports. All of the 14 microfinances were the target demographic of interest in this study. The study adopted descriptive research design. The data was analysed using E-views. The study conducted several test to ensure the stability of the regression model. From the regression model, it was revealed that the four factors included in the study only explained 0.585401% of the variation in the financial performance of deposit taking microfinance banks in Kenya. This study, therefore, recommends the improvement of this model by exploring more variables that would be relevant in explaining the variation some of which have been mentioned above. Further, researchers should focus on identifying more digital technologies that affect financial performance of deposit taking microfinance institutions in Kenya.

Keywords: Mobile banking, internet banking, automated teller machine and agency banking, financial performance

INTRODUCTION

Profit-oriented MFIs have grown in significance, and some claim that this is due to a change in MFI composition from socially conscious organizations with a "poverty lending" approach (which focuses on eradicating poverty through credit and other services funded by donors, government subsidies, and other concessional funds) to institutions with a "financial systems" approach that emphasizes commercial financial intermediation among the poor with a focus on institutional (Assefa, Hermes & Meesters, 2013). Microfinance, provide financial services to the poorer portions of the population and is a prominent topic in current development debates, even though it has a lengthy history. Over the past two decades, the microfinance industry has grown enormously. More than 113 million people were reached by more than a thousand initiatives in 2006. Microfinance institutions (MFIs) are not evenly distributed throughout the world, despite the literature's explanation that the microfinance industry emerged as a response to an unmet need.

Large microfinance markets have grown in some nations and regions but not in others. For instance, Hardy (*et al.,* 2002) contrasts Cameroon and Gabon, two neighboring nations in Central Africa. Even though these nations share a common currency and have similar per capita incomes, Cameroon has a larger microfinance sector than Gabon. According to Hardy (et al., 2002), it is important to look into the causes of these discrepancies. The rate of development has also been very uneven across Latin America. For instance, Marulanda and Otero (2005) demonstrate how significantly the market coverage of MFIs varies between Latin American nations. However, the sector's growth has occurred unevenly on a global scale. It appears that these cross-country variations are influenced by the environment in which MFIs operate. While a lot has been published on factors impacting the development of the financial industry as a whole, essentially nothing has been written on the relationship between the microfinance sector and its macro environment. The institutional aspect of the organizations is the subject of the majority of research on the microfinance sector.

Statement of the problem

The fierce competition that Kenya's microfinance industry has faced is reflected in the shifting market share and profitability. The MFI industry, traditional commercial banks, and online money transfer services like Mpesa are in rivalry with one another (Okombo, 2015). As a result, microfinance institutions in Kenya have reported experiencing intense price competition given that their financial structure limits their ability to change prices (IMFI, 2013). Consequently, there is a need to look at the factors affecting Kenyan microfinance institutions' financial performance.

According to Moşteanu et al. (2020), as long as we have internet connectivity, we can use digital technologies like E-Banking, Home Banking, Digital Banking, and Online Banking. These terms refer to banking services that can be employed through the use of information technology. Businesses and individuals alike are beginning to embrace app-banking services since they are less expensive and time-consuming.

Due to its role in promoting financial inclusion, the microfinance sector is crucial to the financial sector (Hossain *et al.*, 2016). The unbanked lowest of the poor who fall below the national poverty threshold continue to benefit, but there is still a gap because institutions have different definitions of the impoverished clients and the better-of-the-poor, which causes MFIs to stray from their stated missions. Most nations have attested to the success of microfinance in eradicating poverty on a global scale.

According to Mutua, Jagongo and Simiyu (2020), by the end of 2017, only Faulu DTMFI remained afloat while nearly 70% of DTMFIs reported losses. Further, a trend analysis by CBK (2019) indicated that by the end of 2016/2017, Maisha, Choice, Century and Daraja MFIS had breached their minimum requirement for core capital, hence signaling financial instability. Thus, this study investigated the effect of Mobile Banking, Internet Banking, ATM Banking, Agency Banking on MFIs Financial performance. The study thus focused on 14 microfinance institutions in the country.

General objective

This study was meant to establish the relationship between digital technologies and the financial performance of deposit taking microfinance institutions in Kenya

Specific objective

   i.   To evaluate the effect of Mobile banking on the financial performance of deposit taking microfinance institutions in Kenya.

  ii.   To assess the effect of Internet banking on financial performance of deposit taking microfinance institutions in Kenya.

 iii.   To establish the effect of Automated Teller Machines on financial performance of deposit taking microfinance institutions in Kenya.

  iv.   To determine the effect of Agency banking on financial performance of deposit taking microfinance institutions in Kenya

LITERATURE REVIEW

This section evaluates studies theories that had a interrelation with the study variables An information systems theory called the Technology Acceptance Model (TAM) explains how consumers come to accept and employ a technology. According to the concept, when consumers are exposed to new technology, a variety of factors, including the following, affect their choice of how and when to utilize the technology: Fred Davis coined the term "perceived usefulness" (PU), which he described as "the extent to which a person believes that utilizing a certain system would increase his or her effectiveness at work; Davis defined perceived ease-of-use (PEOU) as the degree to which a person thinks a specific technology would need no effort

Diffusion of innovation theory is the process through which an innovation spreads across the people in a social system over time through certain routes. An innovation is an idea, activity, or thing that someone or another unit of adoption perceives as novel. To achieve mutual understanding, participants in a communication process produce and exchange information with one another (Rogers, 2009). According to the Innovation-Decision Process Model, adopting an invention is a process that takes place over time rather than being a single act.

Agency Theory was proposed by Jensen and Meckling, (1976). The agency theory is used to describe the contractual relationship between two parties, which one party (shareholders/principals) deputy the work to another (managers/agents) who perform that work (Jesen & Meckling 1976). The theory is that it divides the organization into two groups namely the managers and shareholders. The shareholders and managers have different interests thus resulting to agency problem which needs to be resolved. Furthermore, agency theory is based on the premise that agents have more information than principals and that this information asymmetry adversely affects the principals' ability to monitor effectively whether their interests are being properly served by agents. It also assumes that principals and agents act rationally and that they will use the contracting process to maximize their wealth. This means that because agents have self-seeking motives, they are likely to take the opportunity to act against the interests of the owners of the firm, for example by partaking in high levels of perquisite consumption.

METHODOLOGY

This study adopted a mixed research design. The study therefore adopted the descriptive research designs. According to Blumberg, Cooper & Schindler (2014), descriptive research allows for an in-depth examination of phenomena or characteristics associated with subject populations, including who, what, when, where, and how of a topic; estimation of the

proportions of the population that have these characteristics; bivariate or multivariate correlation between variables; cross-tabulation of data; strength of relationship or magnitude of relationship; and correlation between variables, The target population was 14 deposit microfinance institutions in the country Kenya.

This study employed fixed effect Model to estimate the effects of, Mobile Banking, Internet Banking, ATM Banking, Agency Banking, on Financial performance. It makes sense to use the fixed-effect model if two conditions are met. First, there is good reason to believe that all the studies are functionally identical. Second, our goal is to compute the common effect size, which would not be generalized beyond the (narrowly defined) population included in the analysis. By definition, these groups must share a common mean. Finally, fixed effect Model is more appropriate with small sample size unlike other estimation techniques that requires large data set for validity (Borenstein, *et al.,* 2010).

The fixed effect model took the form:

ε_{it}………………………………………………………………..........1

$Y_{i,t} = \alpha + MB_{i,t} + IT_{i,t} + ATM_{i,t} + AB_{i,t} + \mu_{it} + \varepsilon_{it}$…………………….………….……..1

Where: Y = Financial Performance, β_0 = Constant Term, β_1 = Beta coefficients, $MB_{i,t}$ = Mobile banking, $IT_{i,t}$ = Internet banking, $ATM_{i,t}$ = Automated Teller Machines, $AB_{i,t}$ = Agency banking, ε = Error Term

RESULTS AND FINDINGS

Test of Assumptions

Table 1: Unit Root Test

Variable	Method	Chi-square Statistic-at level	Probability
Financial performance	ADF - Chi-square	99.7947	0.0000
Mobile banking	ADF - Chi-square	69.1242	0.0000
Internet banking	ADF - Chi-square	70.4250	0.0000
Automatic Teller Machine	ADF - Chi-square	58.8193	0.0006
Agency banking	ADF - Chi-square	65.4938	0.0001

The findings of the unity root approach used to determine whether research variables were stationary are shown in Table 1. The findings demonstrate that all study variables are stationary at the level. Financial performance ADF- Fisher Chi-square has a value of 99.7947 and a p-value of 0.0391, or less than 0.05. Consequently, imply that the presence of a unit root was rejected as the null hypothesis. Therefore, the p-values for Mobile banking, which was

69.1242, Internet banking, which was 70.4250, Automatic Teller Machine, which was 58.8193, and Agency banking, which was 65.4938, which was 0.0000, are all 0.5, indicating that all the variables are stationary at level. This will be important for regression analysis to avoid sub-optimal results.

Table 2: Normality Test

Test statistics		Financial Performance	Mobile banking	Internet banking	Automatic Teller Machine	Agency banking
Normal Parameters	Mean	3.8352	3.9663	3.3173	3.3558	3.7308
	Std. Deviation	0.49271	0.51667	0.74685	0.97832	0.44957
Kolmogorov-Smirnov Z		0.668	0.721	0.839	0.897	0.697
P-value		0.004	0.676	0.482	0.396	0.715

Table 2 presents the results for the normality test. From the results all the variables are normally distributed. The respective Kolmogorov-Smirnov Z statistics were found to be; Mobile banking, Internet banking, Automatic Teller Machine, Agency banking and their associated p-values were found to be 0.764, 0.676, 0.482, 0.396 and 0.715 respectively. All the variables apart from financial performance were normally distributed.

Table 3: Breusch-Godfrey Serial Correlation LM Test

F-statistic	2.088900	Prob. F	0.1169
Chi-Square	15.87016	Prob. Chi-Square	0.0696

Table 3 presents the results on the serial correlation from. From the findings it can be observed that there is no serial correlation among the study variables and residuals since all the p-values for the two test statistics are insignificant.

Table 4: Heteroskedasticity Test

Heteroskedasticity Test: Breusch-Pagan-Godfrey			
F-statistic	0.208001	Prob. F(4,21)	0.9311
Chi-Square	0.990843	Prob. Chi-Square(4)	0.9112

Table 4 presents the results on the Heteroskedasticity test from. From the findings it can be observed that there is Heteroskedasticity test among the study variables and residuals since all the p-values for the three test statistics are insignificant.

Table 5: Collinearity Test

Variables	Tolerance	Variance inflated factor
Mobile Banking	.460	2.173
Internet Banking	.624	1.603
Automatic Teller Machine	.813	1.230
Agency Banking	.307	3.256

Table 5 presents the results on the collinearity test results of the study variables. From the findings since the Tolerance and the variance inflated factor are within the expected ranges the variables can be used in the regression model. Mobile Banking 0.460 Variance inflated factor 2.173, Internet Banking 0.624 Variance inflated factor 1.603, Automatic Teller Machine 0.813 Variance inflated factor 1.230 and Agency Banking 0.307 Variance inflated factor 3.256.

Table 6: Pairwise Granger Causality Tests

Null Hypothesis:	F-Statistic	Prob.
Mobile banking does not Granger Cause financial performance	0.35463	0.7023
Financial performance does not Granger Cause Mobile banking	0.12587	0.8819
Internet Banking does not Granger Cause financial performance	0.59447	0.5537
Financial performance does not Granger Cause Internet Banking	0.53549	0.5869
Automated Teller Machines does not Granger Cause financial performance	0.48157	0.6191
Financial performance does not Granger Cause Automated Teller Machines	0.65430	0.5219
Agency banking does not Granger Cause financial performance	0.99182	0.3743
Financial performance does not Granger Cause Agency banking	0.88081	0.4174

The results of the Granger causality tests are shown in Table 6. Given that the crucial value was discovered to be 0.35463 and 0.12587, and the corresponding p-value was 0.7023 and 0.8819, it was determined from the data that Mobile banking does in fact create Granger's financial performance. The findings also demonstrate that Internet Banking does not increase the likelihood of financial performance because the crucial values were discovered to be 0.59447 and 0.53549, with related p-values of 0.5537 and 0.5869. The findings also demonstrate that ATM does not increase the likelihood of a financial performance, as the crucial values were discovered to be 0.48157 and 0.65430, with corresponding p-values of 0.6191 and 0.5219. The results also show Agency banking does not granger cause financial performance since the critical value were found 0.99182 and 0.88081 and the associated p-value was 0.3743 and 0.4174. The checking of granger causality is important for the optimal introduction of the lags and optimal model identification. For all the other pairs there is no granger causality problem.

Table 7: Kao Residual Cointegration Test

Series: ROA and Mobile Banking, Internet Banking, Automatic Teller Machine, Agency Banking, Sample: 2013 2022, Included observations: 140, Null Hypothesis: No Cointegration Trend assumption: No deterministic trend, Automatic lag length selection based on SIC with a max lag of 1, Newey-West automatic bandwidth selection and Bartlett kernel

	t-Statistic	Probability
Augmented Dickey Fuller	-3.598112	0.0002

Table 7 indicates that there is at least one linear association with the other independent variables for financial performance of deposit taking microfinance banks in Kenya as the dependent variable. The findings demonstrate that the variables have a linear relationship when financial performance of deposit taking microfinance banks in Kenya is the dependent variable, as indicated by the Panel ADF-respective Statistic's critical values of -3.598112 and p-values of 0.0002. Table 9 findings also demonstrate that there is a linear relationship between the variables in the case of a potential regression where financial performance of deposit taking microfinance banks in Kenya is the dependent variable.

Table 8: Multicollinearity Test

		Performance	Mobile banking	Internet banking	ATM banking	Agency banking
Performance	Pearson Correlation	1				
	p-value					
Mobile banking	Pearson Correlation	0.836**	1			
	p-value	0.000				
Internet banking	Pearson Correlation	0.453**	0.247*	1		
	p-value	0.000	0.029			
ATM banking	Pearson Correlation	0.359**	0.112	0.300**	1	
	p-value	0.00	0.327	0.008		
Agency banking	Pearson Correlation	0.769**	0.697**	0.574**	0.376**	1
	p-value	0.000	0.000	0.000	0.001	

The results illustrated in Table 8 indicate that mobile banking significantly and positively correlates with financial performance (r= 0.836, p< 0.000). Which indicates 83.6% positive relationship of mobile banking with financial' performance of deposit taking microfinance. Similarly, Internet banking is also positively and significantly correlated with performance (r= 0.453, p< 0.000). Which indicates 45.3% positive relationship of Internet banking with financial' performance of deposit taking microfinance. Similarly, ATM banking is also positively and significantly correlated with performance (r= 0.359**, p< 0.000). Which indicates 35.9% positive relationship of Internet banking with financial' performance of deposit taking microfinance. Similarly, Agency banking is also positively and significantly correlated with performance (r= 0.769**, p< 0.000). Which indicates 76.9% positive relationship of Internet banking with financial' performance of deposit taking microfinance.

Multi-Regression

Dependent Variable: ROA, Method: Panel EGLS (Cross-section weights),Sample: 2013 2022, Periods included: 10, Cross-sections included: 14, Total panel (balanced) observations: 140, Linear estimation after one-step weighting matrix, White cross-section standard errors & covariance (d.f. corrected)

Table 9: Digital technologies and financial performance of
deposit taking microfinance banks in Kenya

Variable	Coefficient	Std. Error	t-Statistic	Prob.
Mobile Banking	0.139085	0.056358	2.467884	0.0215
Internet Banking	0.674991	0.217700	3.100552	0.0024
ATM Banking	0.446782	0.211340	2.114043	0.0365
Agency Banking	0.782720	0.336701	2.324675	0.0217
(Constant)	2.494118	1.988566	1.254230	0.2122
R-squared	0.585401	Mean dependent var		14.97834
Adjusted R-squared	0.527629	S.D. dependent var		21.67774
S.E. of regression	15.35075	Sum squared resid		28748.74
F-statistic	10.13294	Durbin-Watson stat		1.710105
Probability (F-statistic)	0.000000			

The fitted regression model is

Y = 2.494118+ 0.139085 Mobile Banking + 0.67499 Internet Banking + 0.446782 ATM Banking + 0.782720 Agency Banking + ε

 The above model reflect how various variables reacted with the dependent variable

Mobile Banking

From table 9, the regression coefficient of Mobile Banking was found to be 0.139085. This value shows that holding other variables in the model constant, an increase in Mobile Banking by one unit causes the financial performance of deposit taking microfinance banks in Kenya to decrease by 0.139085 units. The positive effect showed that there was a positive association between cash management and financial performance of deposit taking microfinance banks in Kenya. The coefficient was statistically significant with a t-statistic value of 2.467884. The p-value, which indicated the probability of getting a t-statistic value bigger that than 2.467884, was found to be 0.0215. The result of the hypothesis testing; H_1 Mobile Banking has no significant effect on financial performance of deposit taking microfinance banks in Kenya was not supported by the   (β = 0.139085, P < 0.02150). The first hypothesis H_1 was rejected, implying that the β coefficient was significantly different from zero, that is, Mobile Banking was a significant determinant of financial performance of deposit taking microfinance banks in Kenya.

Internet Banking

From table 9, the regression coefficient of Internet Banking was found to be 0.674991. This value shows that holding other variables in the model constant, an increase in Mobile Banking by one unit causes the financial performance of deposit taking microfinance banks in Kenya to decrease by 0.674991 units. The positive effect showed that there was a positive association between cash management and financial performance of deposit taking microfinance banks in Kenya. The coefficient was statistically significant with a t-statistic value of 3.100552. The p-value, which indicated the probability of getting a t-statistic value bigger that than 3.100552, was found to be 0.0024. The result of the hypothesis testing; H2 Internet Banking has no significant effect on financial performance of deposit taking microfinance banks in Kenya was not supported by the (β = 0.674991, P < 0.0024). The first hypothesis H2 was rejected, implying that the β coefficient was significantly different from zero, that is, Internet Banking was a significant determinant of financial performance of deposit taking microfinance banks in Kenya.

ATM Banking

From table 9, the regression coefficient of ATM Banking was found to be 0.446782. This value shows that holding other variables in the model constant, an decrease in ATM Banking by one unit causes the financial performance of deposit taking microfinance banks in Kenya to decrease by 0.446782 units. The negative effect showed that there was a negative association between ATM Banking and financial performance of deposit taking microfinance banks in Kenya. The coefficient was statistically insignificant with a t-statistic value of 2.114043. The p-value, which indicated the probability of getting a t-statistic value bigger that than 2.114043, was found to be 0.0365. The result of the hypothesis testing; H3 ATM Banking has no insignificant effect on financial performance of deposit taking microfinance banks in Kenya was not supported by the (β = 0.446782, P < 0.0365). The first hypothesis H3 was not rejected, implying that the β coefficient was insignificantly different from zero, that is, ATM Banking was a insignificant determinant of financial performance of deposit taking microfinance banks in Kenya.

Agency Banking

From table 9, the regression coefficient of agency banking was found to be 0.782720. This value shows that holding other variables in the model constant, an increase in Agency Banking by one unit causes the financial performance of deposit taking microfinance banks in Kenya to decrease by 0.782720 units. The positive effect showed that there was a positive

association between Agency Banking and financial performance of deposit taking microfinance banks in Kenya. The coefficient was statistically significant with a t-statistic value of 2.324675. The p-value, which indicated the probability of getting a t-statistic value bigger that than 2.324675, was found to be 0.0217. The result of the hypothesis testing; H4 agency banking has no significant effect on financial performance of deposit taking microfinance banks in Kenya was not supported by the (β = 0.782720, P < 0.0217). The first hypothesis H4 was rejected, implying that the β coefficient was significantly different from zero, that is, agency banking was a significant determinant of financial performance of deposit taking microfinance banks in Kenya.

SUMMARY OF FINDINGS

Mobile Banking

Mobile Banking was found to influence performance of financial performance of deposit taking microfinance banks in Kenya. The Mobile Banking variable was found to have a positive relationship with performance of financial performance of deposit taking microfinance banks in Kenya. The regression analysis results implied that the enhancement of the Mobile Banking increases the performance among financial performance of deposit taking microfinance banks in Kenya.

Internet Banking

Internet Banking was found to influence performance of financial performance of deposit taking microfinance banks in Kenya. The Internet Banking variable was found to have a positive relationship with performance of financial performance of deposit taking microfinance banks in Kenya. The regression analysis results implied that the enhancement of the Internet Banking increases the performance among financial performance of deposit taking microfinance banks in Kenya.

ATM Banking

ATM Banking was found to influence performance of financial performance of deposit taking microfinance banks in Kenya. The ATM Banking variable was found to have a positive relationship with performance of financial performance of deposit taking microfinance banks in Kenya. The regression analysis results implied that the enhancement of the ATM Banking increases the performance among financial performance of deposit taking microfinance banks in Kenya.

Agency Banking

Agency Banking was found to influence performance of financial performance of deposit taking microfinance banks in Kenya. The Agency Banking variable was found to have a positive relationship with performance of financial performance of deposit taking microfinance banks in Kenya. The regression analysis results implied that the enhancement of the Agency Banking increases the performance among financial performance of deposit taking microfinance banks in Kenya.

CONCLUSIONS

Mobile Banking

The study concluded that Mobile Banking has influence on financial performance of deposit taking microfinance banks in Kenya. The findings that, Mobile Banking had a positive influence on financial performance of deposit taking microfinance banks in Kenya were good implication that an increase in Mobile Banking increase financial performance of deposit taking microfinance banks in Kenya, which in turn enhances the financial performance of deposit taking microfinance banks in Kenya. This study also concluded that Mobile Banking was an influential variable.

Internet Banking

The study concluded that Internet Banking has influence on financial performance of deposit taking microfinance banks in Kenya. The findings that, Mobile Banking had a positive influence on financial performance of deposit taking microfinance banks in Kenya were good implication that an increase in Internet Banking increase financial performance of deposit taking microfinance banks in Kenya, which in turn enhances the financial performance of deposit taking microfinance banks in Kenya. This study also concluded that Internet Banking was an influential variable.

ATM Banking

The study concluded that ATM Banking has influence on financial performance of deposit taking microfinance banks in Kenya. The findings that, ATM Banking had a positive influence on financial performance of deposit taking microfinance banks in Kenya were good implication that an increase in ATM Banking increase financial performance of deposit taking microfinance banks in Kenya, which in turn enhances the financial performance of deposit taking microfinance banks in Kenya. This study also concluded that ATM Banking was an influential variable.

Agency Banking

The study concluded that agency banking has influence on financial performance of deposit taking microfinance banks in Kenya. The findings that, Mobile Banking had a positive influence on financial performance of deposit taking microfinance banks in Kenya were good implication that an increase in agency banking increase financial performance of deposit taking microfinance banks in Kenya, which in turn enhances the financial performance of deposit taking microfinance banks in Kenya. This study also concluded that agency banking was an influential variable.

RECOMMENDATIONS

Managerial Implications

The Mobile Banking variable was revealed to be an important determinant of financial performance of deposit taking microfinance banks in Kenya. Since the findings showed Mobile Banking enhanced the financial performance of deposit taking microfinance banks in Kenya related, these organizations should hatch plans to enhance the Mobile Banking. The key stakeholders should do something to enhance the Mobile Banking to reduce the existing problem. The Internet Banking variable was revealed to be an important determinant of financial performance of deposit taking microfinance banks in Kenya. Since the findings showed Internet Banking enhanced the financial performance of deposit taking microfinance banks in Kenya related, these organizations should hatch plans to enhance the Internet Banking. The key stakeholders should do something to enhance the Internet Banking to reduce the existing problem.

The ATM Banking variable was revealed to be an important determinant of financial performance of deposit taking microfinance banks in Kenya. Since the findings showed ATM Banking enhanced the financial performance of deposit taking microfinance banks in Kenya related, these organizations should hatch plans to enhance the ATM Banking. The key stakeholders should do something to enhance the ATM Banking to reduce the existing problem in it adoption. The Agency Banking variable was revealed to be an important determinant of financial performance of deposit taking microfinance banks in Kenya. Since the findings showed Agency Banking enhanced the financial performance of deposit taking microfinance banks in Kenya related, these organizations should hatch plans to enhance the Agency Banking. The key stakeholders should do something to enhance the Agency Banking to reduce the existing problem.

Policy Implications

The study recommends that there should be macro policies that should be formulated to ensure that digital technology coverage's are enhanced in the country. The government should formulate regulations that will ensure the importation and development of domestic technological solutions. Since the findings showed ATM Banking, internet banking, agency banking and mobile banking to enhanced the financial performance of deposit taking microfinance banks in Kenya, these financial organizations should come up with strategies to enhance the ATM Banking, internet banking, agency banking and mobile banking through cooperation with the technology companies to make sure that their facilities are spread though out the country. The key stakeholders should do something to enhance the digital technologies to increase financial services delivery and thus financial performance of commercial banks.

Area for Further Research

Further researchers should focus on identifying more digital technologies that affect financial performance of deposit taking microfinance banks in Kenya. From the regression model, it was revealed that the four factors included in the study only explained 0.585401% of the variation study, therefore, recommends the improvement of this model by exploring more variables that would be relevant in explaining the variation some of which have been mentioned above.

REFERENCES

Assefa, E., Hermes, N., & Meesters, A. (2013). Competition and the performance of microfinance institutions. *Applied Financial Economics*, *23*(9), 767-782.

Blumberg, B. F., Cooper, D. R., & Schindler, P. S. (2014). Business research methods. *New York, NY: McGraw-Hill*

Blumberg, B., Cooper, D., & Schindler, P. (2014). EBOOK: Business research methods. McGraw Hill.

Borenstein, M., Hedges, L. V., Higgins, J. P., & Rothstein, H. R. (2010). A basic introduction to fixed-effect and random-effects models for meta-analysis. *Research synthesis methods*, *1*(2), 97-111.

Hardy, D., Holden, P., & Prokopenko, V. (2003). Microfinance institutions and public policy. *Policy Reform*, *6*(3), 147-158.

Hossain, M. S., Madlool, N. A., Rahim, N. A., Selvaraj, J., Pandey, A. K., & Khan, A. F. (2016). Role of smart grid in renewable energy: An overview. Renewable and Sustainable Energy Reviews, 60, 1168-1184.

Jensen, M. C., & Mecklin, W. H. (1976). Theory of the Firm: Managerial Behaviour, Agency Costs and Ownership Structure. Organisational Economics. JB Barney and WG Ouchi.

Jensen, M. C., & Meckling, W. H. (1976). Theory of the firm: Managerial behavior, agency costs and ownership structure. *Journal of Financial Economics, 3(4), 305−360.*

Marulanda, B., & Otero, M. (2005). The Profile of Microfinance in Latin America in Ten Years: Vision & Characteristics. *Boston MA: ACCION International.*

Mosteanu, N. R. (2020). Socio-Financial Disruption–Key Tips to Manage and Ensure the Business Continuity. *Global Journal of Social Sciences Studies*, *6*(2), 87-95.

Mutua, R. N., Jagongo, A., & Simiyu, E. (2020). Financial outreach and financial sustainability of licensed deposit taking microfinance institutions in Nairobi City County, Kenya. *International Journal of Finance and Accounting*, *5*(2), 69-94.

Okombo, V. (2015). *Influence of customer perceptions on the adoption of mobile banking service: a case of Commercial bank of Africa Nairobi county, Kenya* (Doctoral dissertation, University of Nairobi).

Rogers, P. (2009, July). BRAC-Aarong: Financing and promoting the creative industries. In *International trade forum* (No. 3, p. 35). International Trade Centre.