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Effect of ATM Banking on Performance of Microfinance Banking in Kenya

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Abstract

Purpose: Microfinance banks are investing in ATM banking to satisfy the requirements of the households of accessing financial services and to achieve inclusive economic growth. The study sought to evaluate the effect of ATM banking on performance of the microfinance banks in Kenya. The study was postulated by technology acceptance model.

Methodology: The study adopted positivism philosophy, descriptive research design and census survey. The target population was the thirteen Microfinance Banks regulated by the Central Bank of Kenya. Primary data was collected using questionnaires which were self-administered. Descriptive and inferential statistics were used to calculate the simple means; standard deviations and to make conclusions from the information. Data was presented using frequency tables, and correlations table. Factor analysis was conducted to reduce the number of factors and Kaiser Meyer Olkin and Barlett's test of Sphericity were tested and total variance explained, scree plot and rotated component matrix were drawn. Model R - Square, ANOVA Statistics and regression coefficients R were used to test the hypothesis of bivariate model.

Findings: The results show that ATM banking had an R square of 0.931 and a p value of 0.000 to explain the performance of microfinance banks. The study concluded that there is a statistically significant relationship between ATM banking and performance.

Unique Contribution to Theory, Practice and Policy: The study recommends that microfinance banks should reinforce the security of the ATM machine and partner with other banking institutions to invest in ATMs to reduce operation cost and this will enhance performance of the MFBs.

Keywords: *ATM Banking, Performance, Microfinance Banks*

INTRODUCTION

Microfinance banks are developing financial innovation to satisfy the requirements of households of saving and borrowing. These innovations have helped the population to access finances to fund the businesses, to identify and manage risks, to advance in financial systems and information technology. This has helped the financial industry to benefit and respond to macroeconomics and regulatory factors (Kraisha & Keren, 2018). It has become an engine operating financial structures towards greater commercial competence and productiveness (Taylor, 2017). The emergence of new financial products, financial processes and new marketing channels has provided the paucity with standard products and services and improved the economy (Qamruzzaman & Jianguo, 2017). According to Ansong & Marfo (2011), financial innovation has led to economic growth due to increased number of financial products and efficient financial services. It has reduced transaction costs and downsized risks by the improvement of financial services and hence improving the performance of banking sector (Arnaboldi & Rossignoli, 2015).

Globally, financial sector is developing very fast in the economy. This growth is influenced by innovations in the banking sector. The banking institutions have adopted technology which have resulted in acceptance of ATM banking and has remained an important tool despite the many innovations in the banking sector. Microfinance banks have established ATMs to deliver banking services to low income earners and small and medium enterprises that have long been discriminated against by the commercial bank. Kenya has a relatively well-developed microfinance sector which comprises of organization that can be grouped into the informal system and the formal system. MFBS have helped the population to access financial services which enable them to start or expand small businesses. This has permitted the families to save and to procure basic needs although MFBs continue to experience decline in performance due to reduction in financial income and increased expenses. In 2018 MFBs overall performance declined by 131% and a loss of Ksh 622 million (CBK, 2018). ATM banking has improved the performance of MFBs by bringing near access to financial services to the population without assistance of the banking staff. According to Nyaoga & Muhamed (2017), the banking sector is adopting the ATMs to reduce the cost and ques in the banking halls. ATM banking involves the use of specialized devices in the provision of banking services and are found in the banks, shopping malls and parks for cash withdrawals, cash deposits, bill payments, balance checks and mini statements.

Problem Statement

Microfinance banks innovations have taken an important part in improving the performance and in creation of services that have helped the poor to achieve economic stability. This supports SDGs, Kenya vision 2030, and the big four agenda which aims to reduce the different forms of paucity by 2030 and tries to find ways for protecting social welfare of the poor. Global estimate showed that above 10% of the world population or 800 million people lived below the extreme paucity verge in 2013. In Sub Saharan Africa an estimated 415 million or 35% of the population live below the poverty line (WB, 2017 & UNEP, 2018). In Kenya around 36.1% of the population is living in poverty (UNDP, 2018). Despite the efforts made by the MFBs to bring near banking services to the population to reduce poverty and improve performance, the performance of the MFBs and the delivery of financial services remains a challenge. The MFBs continue to experience decline in performance due to reduction in financial income and increased expenses. In 2018 MFBs overall performance declined by 131% and a loss of Ksh 622 million (CBK, 2018). All the three large MFBs categorized in the large peer, performance

declined from 2.4%, to 0.4%. This shows that MFBs are not performing well due increased expenses and this may hinder the government from achieving its vision 2030 and the big four agenda.

General Objective

The general objective was to evaluate the effect of Automated Teller Machine banking on performance of Microfinance Banks in Kenya.

LITERATURE REVIEW

Technology Acceptance Model

Technology Acceptance Model (TAM) was established by Davis in 1986, with an aim of predicating the possibilities and level of acceptance of a given technological information system by a user. This model posits that for an information system to be acceptable, two factors namely perceived ease of use and usefulness come into play (Davis, 1989). Perceived usefulness is the extent to which a user believes that by virtue of an information system, his or her performance will improve to a significant level. On the other hand, perceived ease of use is the perception on how using an information system will turn out to be effortless. Mwangi, (2013) noted that an individual's attitude is not necessarily a factor in isolation determining a system usage and the attitude stems from the impact the system may create on performance. Automated teller machine is a simple device to manage and it allows individuals to carry out banking transactions without being helped by the bank tellers. This perceived ease of use has made the banks to reduce ques on the banks. Moreover, when a tool is perceived to be easy for use the user is motivated by the sense that he or she is in control over what they are doing (Lepper, 1985). This theory is relevant to this study being that automated banking machine has allowed the population to perform quick and convenient transactions.

RESEARCH METHODOLOGY

The descriptive research design was adopted to describe the effect of ATM banking on performance of MFBs in Kenya. Research design is a plan to merge distinct factors of the study in a logical way to address a research problem (Saunders, Lewis, & Thornhill, 2012; Kevin, 2015). The study adopted positivism philosophy to analyse the effect of ATM banking on performance of MFBs in Kenya. The target population was the senior managers working in the thirteen (13) microfinance banks in Kenya regulated by the CBK. For each of the MFBs five (5) respondents were selected and these are the chief executive officer, finance manager, credit officer, business development manager and operation manager. These senior managers were selected because they have information on ATM banking innovations. The study adopted census and closed ended questionnaires were used as the nature of the data was quantitative. The study used Likert scale questions with five points which are mostly used for assessing and testing respondent's perception or attitude. Descriptive statistics was used and frequencies, mean scores, and standard deviations was used to describe the characteristics of the variables. Factor analysis was carried out where the Kaiser-Meyer-Olkin (KMO) and Bartlett's Test of Sphericity test were used to test the construct validity. Total variance explained, scree plot and rotated component matrix were drawn. Inferential statistics was used to analyse data to give conclusions from the information. The bivariate regression was employed to find out the relationship between ATM banking and performance of the MFBs. Hypothesis testing was carried out to verify the deviation in the sample of the population. Bivariate linear regression was carried out and summary model, ANOVA and regression coefficient model were drawn and interpreted.

FINDING AND DISCUSSION

Response Rate

The study targeted sixty-five (65) respondents from thirteen (13) microfinance banks in Kenya as the results were presented in Table 4.1. The Table 4.1 shows that Sixty-five questionnaires were distributed to three large MFBs, three medium MFBs and seven small MFBs. Sixty (60) questionnaires were returned which was approximately 92%. Five questionnaires were not returned which is 8%. According to Saunder, Lewis & Thornhill (2007), 30 – 40% response rate is moderately high. Fulton (2016), asserts that the average level of response rate is 52.7%. The response rate was higher contributed by the self-administering of questionnaires and the assurance of discretion to the respondents.

Table 1: Response Rate

Response Rate	Frequency	Percentage %
Targeted Population	65	100
Returned	60	92
Unreturned	5	8

Drivers for ATM Banking

A factor analysis was carried out on ATM banking variable to check whether all the 6 statements were suitable for factorability. These items are: cash withdrawal, cash deposit, bills payment, loan application, balance enquiry and funds transfer. The results are presented below:

Test of Sampling Adequacy for ATM Banking

The results in Table 2 shows that the coefficient KMO for ATM banking was 0.640, which was above the recommended minimum threshold of 0.5 (Hair et al., 2010; Field, 2013). The statistic suggests that the 6 statements used to test ATM banking were suitable for factorability. The Table shows that the result of Bartlett's test of Sphericity had a chi square of 142.605 with 15 degree of freedom and a p value of 0.000, which is less than 0.05 (Pallant, 2013). These findings show that the statements used in this variable are highly correlated and hence suitable for structure detection in Principle Component Analysis. Based on these analyses, the results suggest that further analysis could be conducted on the feedback on ATM banking.

Table 2: KMO and Bartlett's Test for ATM Banking

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.640
Bartlett's Test of Sphericity	Approx. Chi-Square	142.605
	Df	15
	Sig.	.000

Total Variance Explained for ATM Banking

The results in Table 3 shows that component one had an initial eigenvalue total of 2.694 and 44.896% of variance, component two had an initial eigenvalue total of 1.619 and 26.982% of

variance. Both components had a total variance of 71.878%, which was above the recommended threshold of 60% (Hair et. al., 2012). These results imply that the two components are suitable for measuring ATM banking. This signifies that the two components that were extracted from the 6 statements of ATM banking explained 71.878% of the total variance.

Table 3: Total Variance Explained for ATM Banking

	Initial Eigenvalues			Rotation Sums of Squared Loadings		
Component	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	2.694	44.896	44.896	2.622	43.696	43.696
2	1.619	26.982	71.878	1.691	28.183	71.878
3	.696	11.597	83.475			
4	.432	7.198	90.673			
5	.414	6.902	97.576			
6	.145	2.424	100.000			

Extraction Method: Principal Component Analysis

Scree Plot for ATM Banking

The results in Figure 1 shows a downward curve which levels after the second component. Further the plot shows that beyond component two the other components 3 to 6 had eigenvalues less that one. These results indicate that two components were retained which had eigenvalues greater than 1. These findings show that the 6 statements used to measure ATM banking should be reduced to two components.

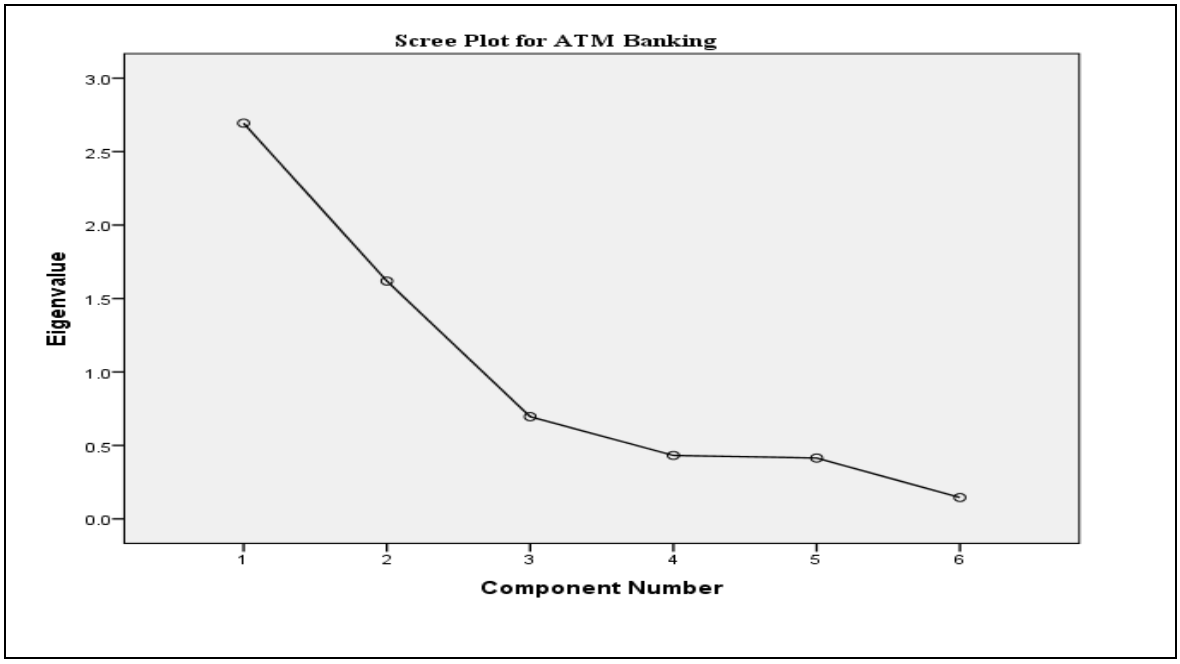

Figure 1: Scree Plot for ATM Banking

Rotated Component Matrix for ATM Banking

As indicated in Table 4, six constructs loaded separately into two components. Component one had four loadings which are: funds transfer 0.916, bills payment 0.872, cash deposit 0.796, and loan application 0.594. These loadings correlated highly with customer transaction. Component two had two loadings: cash withdrawal 0.861 and balance enquiry 0.848 which correlated with bank transactions. All the factors loadings were above the minimum threshold of 0.4 as advocated by (Osborne, Costello and Kellow 2008; Tabachnick and Fidell, 2014). Based on these analyses, ATM banking was tested using six statements constituted in 2 components. These results show all the six ATM banking constructs were retained for further analysis.

Table 4: Rotated Component Matrix for ATM Banking

		Component	
		1	2
ATMB1	The number of fund transfer have increased	0.916	
ATMB2	The number of bill payments have increased	0.872	
ATMB3	The number of cash deposit have increased	0.796	
ATMB4	The number of customers loan application have increased	0.594	
ATMB5	The number of cash withdrawal have increased		0.861
ATMB6	The number of balance enquiry have increased		0.848

Rotation Method: Varimax with Kaiser Normalization

The findings of the factor analysis show that the six statements on the ATM banking which were reduced to two components are drivers of ATM banking. This means that the 6 statements: cash deposits, cash withdrawals, balance enquiry, loan application, bill payments and funds transfer are actual drivers of ATM banking. The findings thus confirm that improving these drivers of ATM banking will enhance the performance of the MFBs. This is consistent with the studies by Ali and Emenike (2016), Mwatsika (2016), who urged that ATM banking has improved service delivery and financial inclusion of the population. Jegede (2018), cautions the use of ATM banking noting that ATM banking has negatively affected the performance of banking industry due to increased cyber-attacks against ATMs.

Inferential Analysis of ATM Banking and Performance

Inferential statistics was conducted using bivariate linear regression to evaluate the relationship between ATM banking and performance of microfinance banks in Kenya. The hypotheses were tested and the results were presented in summary model, ANOVA and regression coefficient table. ATM banking mean score measures were regressed on the weighted score of performance.

Bivariate Linear Regression of ATM Banking and Performance

In order to assess the effect of ATM banking on performance of MFBs in Kenya, the following null hypothesis was measured by the study:

H_o4: ATM banking does not have statistically significant effect on performance of Microfinance banks in Kenya

To assess the suitability of the model: the model summary, ANOVA, and regression coefficient were generated and presented in Table 5, 6 and 7 respectively. The regression model summary of ATM banking is presented in Table 5.

Table 5: Model Summary for ATM Banking

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.930	.864	.862	.18223

The results in Table 5 shows that correlation coefficient R was 0.930. This shows there was a strong positive correlation between ATM banking and performance of MFBs. The R square was 0.864 this indicates that ATM banking explains 86.4% of the variation on performance of MFBs. The ANOVA results are presented in Table 6.

Table 6: ANOVA for ATM Banking

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	12.273	1	12.273	369.570	.000
	Residual	1.926	58	.033		
	Total	14.199	59			

The Table 6 shows that F statistics was 369.57 and the p value of 0.000. This indicates that ATM banking have statistically significant effect on performance of MFBs in Kenya. Based on the results the null hypothesis was rejected because there is a strong positive relationship between ATM banking and performance of MFBs in Kenya. This study concludes that ATM

banking has a statistically significant effect on performance of MFBs in Kenya. The regression coefficient for ATM banking and performance was carried out and presented in Table 7.

Table 7: Regression Coefficients for ATM Banking

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	**Std. Error**	**Beta**	**t**	**Sig.**
1	(Constant)	.594	.098		6.061	.000
	ATM Banking	.689	.036	.930	19.224	.000

The Table 7 shows that ATM banking has a beta coefficient of 0.689 and a p value of 0.000. This indicates that ATM banking accounts for 0.689 of variation in performance of MFBs in Kenya. The findings of the study show that there is a positive relationship between ATM banking and performance of MFBs.

The model $Y = \beta 0 + \beta 3X3 + \varepsilon$ was given by the model

$Y = 0.594 + 0.689^*$ ATMB

CONCLUSIONS AND RECOMMENDATION

Conclusion

The study concluded that ATM banking absorption has surged financial services such as cash withdrawal, money transfer and balance enquiry. The study indicated that ATM banking has a strong positive relationship with the performance of the MFBs in Kenya with a p value of 0.000. The study concludes that at 95% degree of confidence, there is a strong positive and statistically significant correlation between ATM banking and performance of MFBs in Kenya.

Recommendation

The study recommends that MFBs should focus on strategic locations of ATMS where there is enough security to protect the customers from theft when withdrawing cash. The MFBs should also partner with other banking institutions to invest in ATMs to reduce operation cost, this will enhance performance of the microfinance banks.

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