



The Impact of Agency Banking Financial Innovation on Market Capitalization of Commercial Banks Listed in NSE, Kenya

Nicodemus Itivi Muthoka¹, Oluoch Oluoch², Paul Munene Muiruri³

^{1,2}Department of Business Administration, Jomo Kenyatta University of Agriculture and Technology,

¹E-mail: nicodemusmuthoka@gmail.com (Corresponding author)

³Department of Business Administration, Management University of Africa, Kenya

Abstract

The study sought to evaluate the impact of Agency banking, a form of financial innovation, on Market capitalization of listed Commercial Banks in Kenya. In the past recent years, the Kenyan Financial sector has been experiencing a significant change. Quite a number of financial products have been made using new efficient processes. Agency banking to be specific has been very successful in propelling the performance of banks in many developing countries. In Kenya, agency banking was introduced in 2010. In spite of the great advancement and success in Agency banking in Kenya, there have been challenges facing it where security measures have not been put in place leading to it being less popular among investors. Again, agency banking has been limited as large transactions cannot be transacted on the platform. This forms the basis of this study which aims at examining the impact of Agency banking on market capitalization of the Kenyan listed commercial banks. The study targeted all the 11 NSE listed commercial banks in Kenya as at 31st December 2017 where all were sampled making it a census. Data on market capitalization and agency banking was obtained from the banks' annual published financial statements available at NSE website and CBK quarterly reports. The data obtained was then cleaned, coded and statistical outputs generated using STATA statistical package. Descriptive and inferential analysis was employed to analyze the data where Panel data analysis was performed. The findings revealed that Agency banking innovation had a statistically significant effect on the market capitalization of the listed commercial banks in Kenya. It is therefore recommended that listed banks should embrace agency banking through increasing the number of agents and should cover all regions in Kenya and encouraged customers to be regular users of the agents so as to increase the number of transactions as this would increase the market share. A comparative study should be conducted in other countries preferably in Africa or developing nations to test for the influence and impact of Agency banking on market capitalization in commercial banks.

Key words

Market capitalization, banking agency, financial innovation, commercial bank

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1. Introduction

Agency banking is defined to be business carried out by an agent on behalf of an institution as permitted under CBK (CBK, 2014). Market capitalization also known as market cap, demonstrates the value that investors are placing on a company at a given point in time, as represented by the total dollar value of a company's outstanding shares of stock. Market capitalization can be calculated by multiplying a company's shares outstanding by the current market price of a single share (Business dictionary, 2011). Market capitalization evaluates a companies' and stock in exchange markets values. It is a continuous

valuation in the market of a public firm whose shares are publicly traded on a stock exchange. It is calculated through multiplying the total number of outstanding shares of the shareholders with the current market price per share at a given period of time. Computation of a market capitalization is a key part in any stock valuation formula.

Market capitalization is an essential measure for speculators in the assurance of the profits on their venture. Everyday stock value changes give openly accessible data on the wellbeing of a publicly traded organization. Market capitalization speaks on behalf of the general population on the estimation of an organization's equity. A productive security's exchange theory states that stock cost can mirror all pertinent data about an organization's recorded or present and public or private. Market capitalization can signify the measure of an organization's future money streams to its investors, principally the dividends, and the peril of getting the money streams, adequately the normal rate of return (Ologunde *et al.*, 2008).

Developing nations like Kenya are progressively holding onto agency banking as a method for conveying banking services to numerous unreached individuals particularly families with low-pay. According to the 2009 National Financial Access Survey, 32 % of Kenya's bankable populace is still absolutely out of the money related administration circle. Difficulties in getting to monetary primary drivers are generally mind-boggling expenses of getting banks services. Early encounters have appeared banks through agency's can fundamentally diminish set-up and conveyance costs, offering cash flow activities as it were or on the other hand a more extensive scope of budgetary administrations to clients who as a rule feel progressively good saving money at their nearby shippers than at customary bank branches (Lozano and Mandrile, 2009).

It has been found out that by December 2016, 18 commercial banks and 5 microfinance banks (MFBs) had contracted 53,833 and 2,068 agents spread all over the nation. This was in comparison with the earlier year, December 2015, where the number of operators shrunk by business banks and MFBs were 40,592 and 1,154 respectively. The change infers a 33 percent (expansion by 13,241 agents) and 79 percent (expansion by 914 operators/agents) development of number of operators shrunk by business banks and microfinance banks, respectively. More than 87 percent of the endorsed business bank agents were amassed in 3 banks with the biggest physical branch present namely: Equity Bank Ltd. with 25,428 operators, Kenya Commercial Bank Ltd. with 12,883 and Cooperative Bank Ltd. with 8,856. The general increment in the number of operators is ascribed to the developing certainty and adequacy of the agency banking model by the public and banks as an alternative of doing a banking business (CBK, 2016).

According to Cytonn Investments (2015), with the growth of mobile and agency banking, penetration in the market has increased and this led to a greater number of transactions as well as offer loan products to the mass market. From the research findings of effect of Financial Innovations on financial performance of Savings and Credit Co-operative Societies in Kenya, a case of Kakamega Teachers Co-operative Society Limited by Songoro *et al.*, (2015) the results revealed that financial innovation factors do not account for 100% change in financial performance. The study examined effect of Process innovations specifically, Automation, Computerization and ATMs on Dividends per share and profitability.

1.1. Statement of the problem

Agency banking as a financial innovation has shown to be exceptionally effective in moving the performance of banks in many developing nations. Agency banking has been very successful in countries like Colombia, Brazil, Peru, and India (Kinyanjui, 2011). Agency banking financial innovation was propelled in Kenya in the year 2010 and despite the success stories in other countries it has been found that only a bunch of banks have so far taken up the choice. Just four out of the 43 Kenya Commercial banks have effectively grasped and embraced agency banking (CBK 2010). However, difficulties in getting to monetary primary drivers are generally mind-boggling expenses of getting banks services. Early encounters have appeared banks through agency's can fundamentally diminish set-up and conveyance costs, offering cash flow activities as it were or on the other hand a more extensive scope of budgetary administrations to clients who as a rule feel progressively good saving money at their nearby shippers than at customary bank branches (Lozano and Mandrile, 2009).

Studies have been done an example is a study in the Kenyan context by Kimingi (2010) who examined the effect of technological innovations on financial performance of commercial banks in Kenya. However, the studies were not exhaustive and necessitated the need to carry out a study from the Kenyan

context to establish the effects of Agency banking financial innovations on market capitalization of listed commercial banks in Kenya.

1.2. General Objective

The main objective of this study was to establish the effect of Agency banking innovation on market capitalization of listed commercial banks in Kenya.

1.3. Research Hypotheses

This study sought to address the following pertinent research hypotheses;

H₀₁: *Agency banking innovation has no significant effect on the market capitalization of listed commercial banks in Kenya.*

2. Literature review

This section reviews both theoretical and empirical literature that hypothesizes the influence of Branchless banking innovation and Market capitalization.

2.1. Agency Theory

This is one of the suppositions that explain the principal agent relationship. According to Mitnick (2006), the Agency theory was revealed in the 1970s from a mixture of branch of knowledge of economics and institutional theory and there is some heated disagreement as to who came up with the theory, with theorists Stephen Ross and Barry Mitnick. When one or more artificial or natural persons usually referred to as the principal engages another person normally called an Agent to perform a specific service on their behalf, this association is usually called Agency relationship. In this relationship, both the principal and agent each anticipate getting some net profit. This theory examines an association between a business owner and its managers who, under law represents the owners and how it is related to the returns.

Green (2012) argued that the association between the principal and agent is referred to as agency, and the rule of this agency provides guidelines for such an association. The conventional terms of a specific principal-agent association are frequently represented in a contract. An obligation to be made by an agent on behalf of the principal is the obligation of the principal and not that of the agent. It permits the principal to confer authority to somebody to execute his/her duties, either for a specific purpose or generally to conduct numerous transactions. Intrinsic in the Principal-Agent association is understandably that the agent will represent the principal. The agent commits that he/she will be loyal to the principal. He further undertakes a commitment that he/she will comply with the principal's directives and will act properly in the performance his/her duties. An agent is not allowed to take private advantage of the business good successes that the agency position unearths. Similarly, a principal places confidence and trust in the agent. These obligations results in confidence trustee relationship between the Principal and Agent.

The CBK initiated measures and ways in the year 2009 to open banking channels to non-bank agents. Agents were permitted to provide financial services through a modification to the Banking Act (passed as part of the Finance Act, 2009).

Agency theory is relevant for this study because the Principal (Commercial banks) have contracted the agents to do business on their behalf, Agency banking is one of the independent variables in this study.

2.2. Empirical review

The agency banking model is an innovative way which commercial banks use to reach the unbanked population. The model uses non-bank entities like shopping arcades, postal services offices, fuel stations, and internet cafe's, pharmacist, eateries and retail markets. According to CBK (2013), the agency banking approach which was inaugurated in year 2010 has continued to lead to improved access to banking services. By 2013, 13 commercial banks had been contracted by CBK to provide banking services through other third parties other than the bank called bank agents. As at September 2013, 21,816 agents had been contracted by CBK translating to over 69.2 million transactions valued as Ksh. 366.8 billion. By June 2013, 13 banks had been accredited and 19,649 active agents had been contracted which translated to over 58.6 million transactions valued at Ksh. 310.5 billion. The number of banking transactions launched through

agents raised from 10.2 million registered in the quarter ending June 2013 to 10.6 million transactions registered in the quarter ending September 2013. However, the value of banking transactions launched through agents declined from Ksh. 60.4 billion to Ksh. 56.3 billion over the same period. However, not all banks in Kenya have embraced agency banking.

The advocacy towards agency banking was the need to reach the un-banked population who could not be able to access banking services. The number of commercial banks that had embraced the model remain low (29% of the 43 banks) while some of the banks which have registered for agency banking are yet to roll out the operations (CBK, 2014). Three groups to a transaction exist in interpreting agency and these include: the customer, operator of the POS (Point of Sale) device who is also the agent and the bank. Before launching any transaction, each of the groups above should validate the transactions with two factors of security. Some of the security features to check would include a private card and a secret PIN. A bank can as well provide a unique secret key to each of its customers to avoid fraudulent POS terminals, upon which the bank would confirm to its clients before the transaction (Ivatury, 2008).

Mbobua (2013) argued that Brazil is often acknowledged as a universal leader in agency banking. This is because Brazil was an ancient implementer of Agency Banking model. Furthermore, for many years, it has established some fully developed systems of agents doing banking services that cover more than 99% of the country's counties. In Latin America, many countries have conformed to the Agency banking model, including Mexico, Peru, Colombia, Ecuador, Venezuela, Argentina, and Bolivia. Therefore, as revolution banking has not been left behind with Technology proliferation that has led to revolution of all other sectors of the economy. This has led to increase in innovation in the banking industry for the last 30 to 40 years. Thus, majority of commercial banks began conforming to diverse and alternative Technology based banking channels. Consequently, banks have recently shifted to technology- based service from the ancient traditional front services. Agency banking creates value to both banks and clients and hence it becomes one of the channels that banks use to deliver banking services to the customers.

In the Kenyan context, Kimingi (2010) conducted an enquiry to examine effect of technological innovations on financial performance of commercial banks in Kenya. In his study, he adopted descriptive survey with the study population being commercial banks in Kenya. He used descriptive and content methods of data analysis because both qualitative and quantitative data was collected which was both primary and secondary data. To analyze the qualitative data content analysis was used where as to analyze the quantitative data, descriptive methods were utilized. Technological innovations for example ATM services, internet-based banking services, mobile phone were found to have been adopted by the commercial banks. Consequently, these technological innovations had contributed to improved bank sales, profits and return on equity hence increased financial performance of banks in Kenya through. The study determined that modern technological innovations are recommended for banks to remain highly competitive in the banking industry.

A similar study in commercial banks in Kenya by Njoki and Aloko (2015) entitled correlation between financial innovations and financial performance determined that out that financial performance of commercial banks was positively influenced by various financial innovations such as agency banking, online banking, mobile phone banking and ATM banking in a period of 5 years between 2009 and 2013. Similarly, financial performance of the banks in Kenya was found to be affected significantly and positively by financial innovativeness and innovativeness dimension. Contrary, a study by Korir and Sang (2015) on effect of financial innovation on bank performance of Kenyan commercial banks determined that an improvement in innovation level results to improved firm performance. An enquiry influence of innovation orientation on financial performance of Kenyan commercial banks by Koech and Makori (2014) on which they investigated the effect of market value, Technology and process innovations on financial performance of commercial banks concluded that technology innovation leads to higher market value of commercial banks in Kenya.

3. Methodology of research

3.1. Research Design

This study used descriptive research design and Panel quantitative research design to describe the influence of various financial innovation on market capitalization of listed commercial banks in Kenya.

Kothari (2004) defines descriptive survey model as a plan which pursues and identifies precisely the attributes for a person, circumstance or a category. Therefore, this perspective was suitable for this study, since the study collected in-depth information through descriptions and is useful for singling out variables. Descriptive research has the benefit that the subject is noted in a completely natural and unaltered natural environment and that it permits respondents to reply in their time frame (Cooper and Schindler, 2014).

3.2. Target Population

This study population was composed of all the 11 listed commercial banks at the NSE. According to CBK, there were 11 listed commercial banks at the NSE as at 31st December 2016. The choice for the listed banks was made because data on the dependent variable market capitalization is readily available at NSE and CBK annual reports and therefore the ease in determining the relationship between Branchless banking financial innovations on Market capitalization. The main reason for choosing these employees from finance and operations departments was because they are responsible for financial innovation in the bank and have a firsthand knowledge on the link between financial innovation and market capitalization.

3.3 Sample Size determination

The study performed a census where all the 11 listed banks were chosen.

3.4 Data Collection procedures

The study used secondary data that was extracted from financial statements available at NSE and CBK quarterly reports. The data obtained for all variables in each firm was organized in panels. Panel data is suitable for longitudinal analysis because it provides both the time and cross-sections dimensions.

3.5 Data Analysis and Presentation

After extracting the data needed in the study from the various financial statements available at NSE hand books and CBK, Microsoft office - excel was used to compute the ratios for the study variables in each bank for every year. Descriptive statistics such as measures of central tendency and measures of dispersion were used to summarize and profile the pattern in each bank. In addition, panel regression analysis was employed to establish the nature and significance of the relationship between Agency banking which is the independent variable and market capitalization which is the dependent variable. The Significance of the independent variable on the dependent variable was carried out using t-test at 5% significance level.

The general linear regression equation defined and tested is provided in the equation below:

$$MC_{it} = \beta_0 + \beta_1 AB_{it} + \epsilon \tag{1}$$

Where:

MC_{it} = Market Capitalization of Bank i at time t . It will be operationalized as a ratio log of market capitalization.

Market capitalization= No. of outstanding shares multiplied by Market price per share

β_0 is a constant for every bank which has a fixed effect

β_1 = Regression coefficients values

ϵ_{it} =Error term

AB_{it} = Agency banking of banks i at time t .

t = 2013.....2017

3.6. Operationalization of Variables

All items of the variables were operationalized and measured as follows:

Table 1. Variable Measurement

	Variables	Measures	Notation
Dependent Variable	Market Capitalization	Logarithm of No. of outstanding shares*Market price per share	MC
Independent Variables	Agency Banking	Log of Value of transactions through Agency banking	AB

4. Results and Discussions

4.1. Descriptive statistics

Data from secondary sources was obtained on Market capitalization and Agency banking. The data was transformed using natural logarithms in order to work with smaller figures. Descriptive statistics were then performed which comprised of mean, median, range, standard deviation, skewness and kurtosis. Again Jarque-Bera test of normality was conducted to test for the normality of the data. The results were presented in Table 2.

Table 2. Descriptive Statistics

	LNAB	LNMC
Mean	7.552675	10.65472
Median	7.345000	10.80160
Maximum	10.14820	13.87850
Minimum	5.671400	7.600900
Std. Dev.	1.059247	1.228532
Skewness	0.671944	-0.476833
Kurtosis	2.924228	3.562229
Jarque-Bera	4.151986	2.808624
Probability	0.125432	0.245536
Sum	415.3971	586.0094
Sum Sq. Dev.	60.58822	81.50164
Observations	55	55

The results showed the mean values, median, range which contained the maximum and the minimum values, the standard deviation, skewness and kurtosis and Jarque Bera test of normality. Agency banking was found to have a mean of 7.55, a median value of 7.35 and a standard deviation of 1.059 while market capitalization was found to have a mean value of 10.654, a median value of 10.802 and a standard deviation of 1.223. The results also indicated that the data was not normally distributed which is the case in most financial time series data. The plotted graphs showed the trend of the agency banking and also market capitalization over the years from 2013 to 2017. The plots have been presented per each variable.

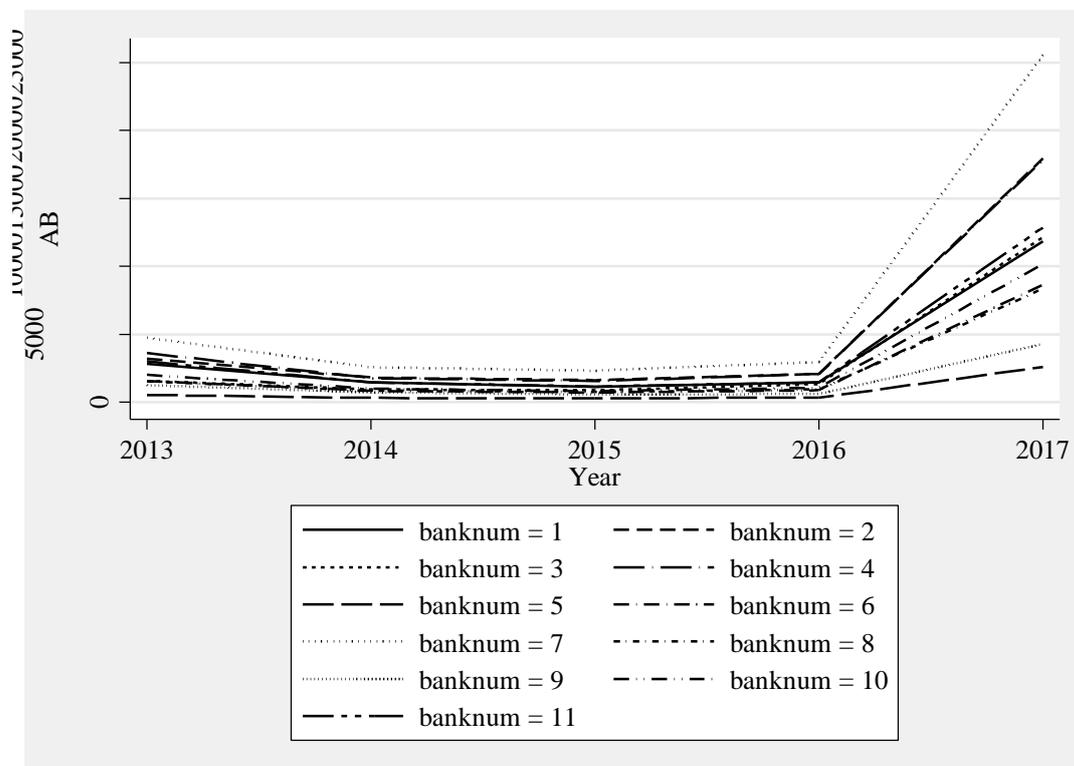


Figure 1. Combined analysis of Agency banking from 2013 to 2017

Figure 1 showed that there was an upward trend in Agency banking from 2016 to 2017 December which was not the case before 2016. This show that many banks adopted agency banking in 2016 despite it coming to existence in 2010.

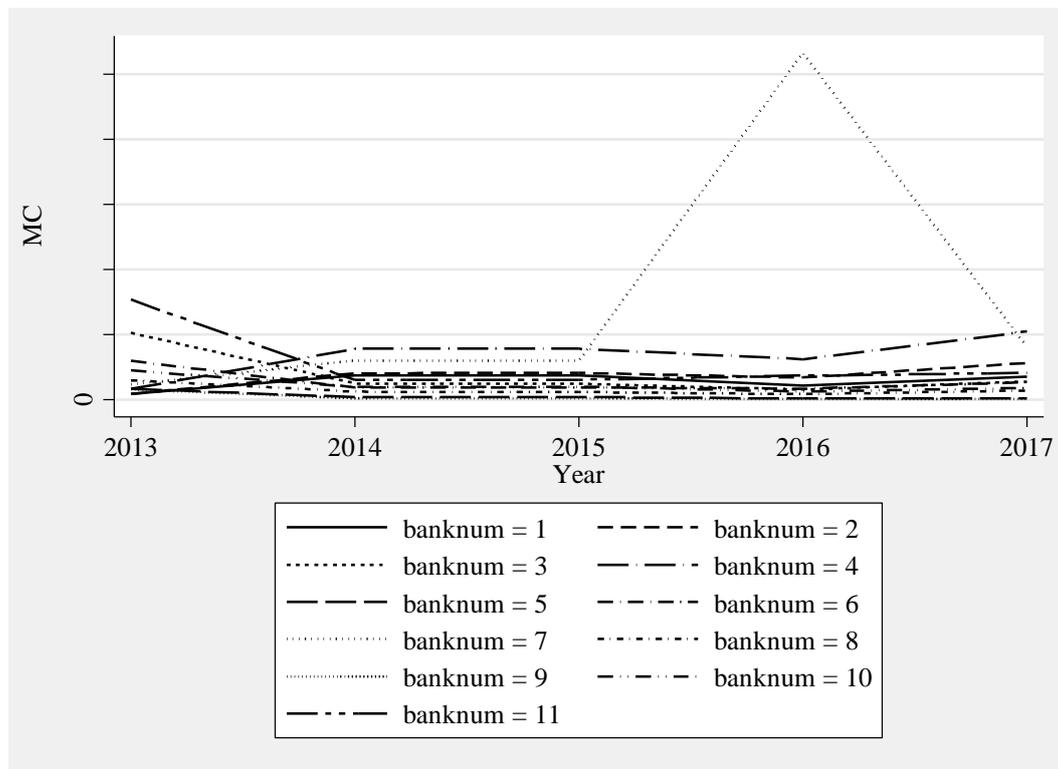


Figure 2. Combined analysis of Market capitalization from 2013 to 2017

Figure 2 shows the market capitalization trend in the 5 years. From the results, KCB bank was found to have registered a sharp rise in market capitalization in 2015-2016 which later normalized. The trend has remained constant over time in most banks.

4.2. Panel data Diagnostic tests

Various tests were performed to determine the suitability of the panel data analysis. The tests that aimed at establishing if the panel data fulfilled the cardinal requirements of classical linear regression analysis included: heteroscedasticity test, test for multicollinearity among independent variables and serial correlation test. Where violation to these assumptions was detected, appropriate remedies were employed.

4.2.1 Heteroscedasticity Test

To test for panel level heteroscedasticity, the study adopted Breusch-Pagan/Cook-Weisberg test for heteroscedasticity. This involved first estimating the specified empirical model by OLS and then running the test against the null hypothesis of homoscedastic (constant) error variance (Torres-Reyna, 2007).

Table 3. Breusch Pagan LM test

Estimated results:	Var	sd=sqrt (Var)
InMC	0.50929	0.329
E	0.0184	0.1816
U	0.04954	0.1867

Test: Var (u) = 0
 chibar2 (01) = 15.64
 Prob > chibar2 = 0.000

The tests results provided chi-square distribution value of 15.64 with a corresponding p-value of 0.0000. The results shows that the chi-square statistic was significant at 5 percent level and hence the null hypothesis of constant variance was rejected. Therefore, panel-level heteroscedasticity was present. The results confirmed that pooled effects model was not appropriate for the study, as a result, the current study will adopt either the random effects model (REM) or the fixed effects model (FEM).

4.2.2. Serial Correlation Test

To detect presence of autocorrelation in panel data, the study used Wooldridge test for autocorrelation against the null hypothesis that there was no first order autocorrelation. The test results provided F-statistic value of 14.95 at 1 and 54 degrees of freedom. The F-statistic value had a corresponding p-value of 0.003 indicating that the null hypothesis of no first order autocorrelation was strongly rejected at 5% significance level. The result therefore concluded that the panel data suffered from the problem of first-order autocorrelation. The study remedied this violation of classical linear regression model assumption by employing FGLS estimation technique (Mwangi *et al.*, 2014).

Bivariate correlation analysis

A bivariate correlation between variables was performed to examine significance of the relationships between market capitalization and the financial innovations. The results were presented in Table 4.

Table 4. Bivariate Correlation

Correlation		
Probability	LNAB	LNMC
LNAB	1	

	0.0000	
LNMC	0.431582	1.
	0.0010	-----
	0.0051	0.0000

The results in Table 4 depicted a significant relationship and effect between Market capitalization and the financial innovations. This was indicated by significant p-values of less than 0.05 at 5% level of significance.

4.3. Panel Model Regression Results and Hypothesis Testing

The initial tests were performed to help in identifying the best model in this study. Under Panel data analysis there are two main methods that can be performed namely: fixed effects model and random effect model.

4.3.1. Random Effect Model or Fixed Effect Model

The study fitted the two models known as fixed effect and random effect. Hausman test, which examines correlation effect between errors and repressors, was used to find the most appropriate model to adopt. The results were then shown in Table 5.

Table 5. Hausman Test

	(b) fixed	(c) Random	(b-B) Difference	sqrt(diag(V_b-V_B)) S.E.
LnAB	0.022711	0.4092	0.3865	0.002

$Chi2 = (b-B)'[(V_b-V_B)^{-1}](b-B) = 10.50, Prob>chi2 = 0.0328$

From Table 5, it was found that the chi-square statistic for the test was 10.50 with a significant p-value of 0.0328 compared to a significance level ($\alpha = 0.05$). This implies that the fixed effect model is more satisfactory than the random effect model and was therefore adopted.

4.3.2. Fixed effects Model

The results in Table 6 depicts the summary of the fixed effect model which was adopted as seen in the previous subsection. The panels were shown to be strongly balanced in the 11 listed commercial banks. The panel data was strongly balanced as the lowest, average and highest number of observations per groups was all equal to 5. The coefficient of determination values (R^2 s) within, between and the overall were found to be 0.0362, 0.7822 and 0.3891, respectively. The coefficient of determination (R^2) generally shows the change of the dependent variable, market capitalization in this study that is explained by the change of the independent (financial innovations). R^2 within is the measure of the goodness of fit for the distinct mean de-trended data which ignores all the evidence between groups. The analysis of variance (ANOVA) on the other hand measures general significance of a model using F-statistic and p-value. In this study, the p-value of the F statistic to the model was 0.000. This implied significance as the value was less than the significance level ($\alpha=0.05$). This implied that the predicted parameters in the model are not equal to zero. This implies that the model is generally significant and at least one of the predictors is not equal to zero.

Table 6. Fixed effects model

Fixed-effects (within) regression	Number of obs = 55					
Group variable: bank	Number of groups = 11					
R-sq: within = 0.0362	Obs per group: min = 5					
between = 0.7822	avg = 5.0					
overall = 0.3891	max = 5					
	F(4,40) = 3.812					
corr(u_i, Xb) = 0.1044	Prob > F = 0.000					
	Coef.	Std. Err.	T	P>t	[95% Conf.	Interval]
lnAB	0.02271	0.365908	1.610	0.015	0.71682	0.762238
_cons	14.79697	13.54164	2.191	0.001	12.5717	42.16566
sigma_u 1.6293007						
sigma_e .16156474						
rho .74311469 (fraction of variance due to u_i)						

F test that all $u_i=0$: $F(10, 40) = 3.12$ Prob > F = 0.0050

From the table, the fixed effects model was as follows:

$$Y_{it} = B_0 + \text{Bit}X_{it} + \mu_{it} + \epsilon_{it}$$

This was written as:

$$Y_{it} = 14.79697 + 0.02271 X_1 + 1.6293 + 16156$$

Table 6 presents the model coefficients from the fixed effect model fitted. The coefficient of agency banking was found to be significant which 0.02271 was. The p-value of the t-statistics for the coefficient estimated was found to be 0.015 hence less than the significance level ($\alpha= 0.05$) implying that all the agency banking a form of financial innovation have a significant effect on market capitalization of listed commercial banks in Kenya. The constant term for the analysis was also found to be significant with a p-value less than 0.05. A shown in the table, the intra-class correlation is 0.743 implying that 74.3% of the variance is due to the differences across panels.

These discoveries corroborated with those by Njoki and Aloko (2015) who argued that the recognized bank innovations particularly mobile banking, internet banking, agency banking and ATM banking had decidedly affected on the performance of business banks in Kenya over the 5-year time span somewhere in the range of 2009 and 2013. Again, an investigation by Korir and Sang (2015) on financial innovations and performance of business banks in Kenya affirmed that an expansion in the development level outcomes to expanded financial execution. However, these results contradicted the findings in a study on the effect of Financial Innovations such as Agency banking and Mobile banking on financial performance of Savings and Credit Co-operative Societies in Kenya, a case of Kakamega Teachers Co-operative Society Limited by Songoro *et al.*, (2015) where the results revealed that financial innovation factors such as Agency banking were not significant and do not account for 100% change in financial performance.

5. Summary and Conclusions

The study concluded that there was a statistically significant impact of agency banking financial innovation on market capitalization of Kenyan commercial banks listed in the Nairobi stock exchange. This emphasized on the need for listed banks to embrace agency banking through increasing the number of agents and encouraging deposits and withdrawals.

5.1. Recommendations and Areas of further study

Based on the empirical findings from the study, it is recommended that listed banks should embrace agency banking through increasing the number of agents and should cover all regions in Kenya. Again, members of the public should be encouraged to make cash deposits and cash withdrawals from agents so as to increase the market value. The customers should again be encouraged to be regular users of the agents so as to increase the number of transactions. This would increase the market share. The study was conducted in the Kenyan context; a comparative study should be conducted in other countries preferably in Africa or developing nations to test for the influence and impact of Agency banking on market capitalization in commercial banks.

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