INFLUENCE OF FINANCIAL INNOVATIONS ON FINANCIAL PERFORMANCE OF SAVINGS AND CREDIT CO-OPERATIVE SOCIETIES IN NYERI COUNTY KENYA

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ABSTRACT

Financial innovations are crucial to sustaining financial performance. The study sought to establish the influence of financial innovations on financial performance of SACCO's in Nyeri County. This study was guided by Rogers's Innovation Diffusion Theory, Technology Adoption Models and Task- Technology Fit Theory as the theoretical frameworks. The population of the study was the fifty six(56) active SACCO's operating in Nyeri County as at December 31, 2013.This study employed a cross sectional survey research design and stratified sampling technique was used to determine the sample of 30 SACCO's. A semi structured questionnaire was used as the data collection tool and was self-administered to the target sample of respondents. To establish the validity and reliability of the data collection instrument, a pilot study was carried out. Cronbach alpha coefficient was used to assess the reliability of the data collection tool. Factor analysis was used to measure the construct validity of the questionnaire. Descriptive statistics were generated to describe the study objectives and the profile of respondents. Measures of variations were used to establish convergence of the responses. Inferential statistics, including, model fitness (R^2), ANOVA and regression coefficients were used to test the study null hypothesis. Data was presented using tables and bar charts. Majority of the participants (62%) indicated that telephone banking had affected SACCOs financial performance to a great extent. A significant number of participants (83%) indicated that internet banking had affected financial performance of SACCOs to a great extent. A significant number of participants (78%) in the study indicated the electronic funds transfer affected financial performance to a great extent. The study findings show that telephone banking (p=0.000) and internet banking (p=0.032) were statistically significant at 95%.The study concludes that there is a significant relationship between financial innovations and the financial performance of SACCOs and that telephone banking and internet banking were found to be the main drivers of the financial performance of SACCOs. The study recommends that more investment should go into mobile and internet banking since the two drive profitability as opposed to ATM banking.

Key words: Innovations, SACCOs, Microfinance, SACCO growth

1.1   Introduction

Financial innovation is broadly seen as an essential component of competitiveness, embedded in the organizational structures, processes, products and services within a firm (RoK, 2013). Financial innovations refer to development of new products, formation of new institutions, embracing new technology and other aspects that portray newness in the financial markets (Schumpeter, 2008)**.** Strategic decision making, system realignment, institutional setting, injecting new management, expanding to new markets are some of the activities that portray financial innovation.

Financial innovation fosters faster dissemination of information and its more rapid incorporation into financial market prices (Mosongo, 2013). Financial innovations also refer to development of new products like telephone banking, formation of new services like internet banking, new production process like electronic record keeping (EFT) or new organizational forms (Frame&White, 2004). The current study investigates the relationship between financial innovations and the consequential financial performance of SACCOs in Kenya where the context of focus will be SACCOs in Nyeri County.

As financial intermediaries, SACCOs channels savings into loans, providing saving opportunities for the poor especially in the rural areas.They are a major player in the financial sector managing to mobilize over Kshs.200 billion, which is approximately 31% of the total national savings (CBK, 2009).Over 81% of Kenyans rely on SACCOS to access financial services, making SACCOS a critical player in the financial sector in Kenya (FinAccess, 2012).SACCOs have grown faster than other co-operatives. The enactmentof the SACCO Societies Act 2008 places the licensing, regulation and supervision of deposit taking under the armpit of the SACCO Societies Regulatory Authority (SASRA).

The number of registered SACCOsin Kenya was 6,007 as at December 2010. Approximately 49% of these SACCOs were active and had filed their duly audited accounts with the commissioner for co-operatives (SASRA, 2011). The number includes both deposit taking that is, SACCOs operating FOSAs and non-deposit taking SACCOs. The estimated proportion of both deposit taking and non-deposit taking SACCOs were 7% and 93% respectively (PROCASUR, 2012).

1.2   Statement of the problem

More than 81% of Kenyans rely on SACCO's to access financial services (FinAccess, 2012). However, the use of SACCOs by Kenyans as a financial service provider has been declining over the last five years (Ibid, 2013). The decline has been from a high of 13.5% in 2009 to as low as 9.1% by the end of the year 2013. During the same period, customers accessing commercial banks for financial services has grown from a low of 13.5% in 2006 to 29.2% in 2013 (Ibid, 2013).

This trend in loss of customers is attributed to the competition from banks through proactive outreach and offering of easy access transactions accounts as well as consumer loans through financial innovations (FinAccess, 2009).SACCOs have been losing their market share in spite of their geographical spread in the country compared to other financial providers (Nyaga, 2012).

Although several studies have been done on financial innovations in Kenya,few have focused on the relationship between financial innovations and the financial performance of SACCOs .The only documented studies includes ,a study onmobile banking and financial inclusion (Michael, 2011), another on the impact of M-Pesa in Kenya (Mbiti, 2011) and a recent study on the effects effects of ICT on corporate strategy of SACCOs in Nyeri County (Muthui,2013). From the reviewed empirical studies, it is evident that there are limited reports empirical on financial innovations and financial performance generally and even less on SACCOs in Nyeri County hence a significant research gap. This study seeks to bridge the existing research.

1.3   Research Objectives

The study pursued the following specific objectives:
  i.   To determine the relationship between telephone banking and financial performance of SACCOs in Nyeri County.
 ii.   To identify the relationship between internet banking and financial performance of SACCOs in Nyeri County.
iii.   To examine the influence of electronic fund transfer on financial performance of SACCOs in Nyeri County.
 iv.   To find out the combined influence of telephone banking, internet banking and electronic fund transfer on financial performance of SACCOs in Nyeri County.

2.   LITERATURE REVIEW

2.1   Theoretical review

2.1.1   Rogers Innovation Diffusion Theory

Rogers' Diffusion of Innovation Theory (Rogers, 1995) seek out to give explanation how new financial innovations are accepted, this theory proposes that there are five features of an innovation that affect acceptance: complexity, compatibility, testability, observability and relative advantage. Complexity is the extent to which an innovation is perceived as difficult to comprehend and use. Rogers suggested that new innovations may be categorized on a complexity-simplicity range with a condition that the meaning of the innovation may not be clearly understood by prospective adopters. When key users perceive innovations as being simple to use the innovations will be more easily adopted (Greenhalgh et al., 2004).

2.1.2   Technology Acceptance Model (TAM)

Davis (1989) illustrates the importance of prospective information technology (IT) users' perception of a system's value and simplicity in use on their possibility to use it. The importance of TAM as a model for forecasting IT usage is established by the frequency and consistency with which it is supported empirically by Davis and colleagues.

Even though the strong relationship between the user perception and IT, usage is broadly recognized, TAM's limitations are also becoming evident, that is, while it is useful in predicting system usage, TAM is not as much useful for explaining the relationship between the system usage and job performance.

2.1.3   Task-Technology Fit Theory

Task-Technology Fit (TTF) is the matching of the abilities of the technology to the demands of the job, that is, the capability of IT to support a job (Goodhue and Thompson, 1995). TTF models have four major constructs, Technology Characteristics, Task Characteristics, which jointly affect the third one Task-Technology Fit, which later influences the outcome variable, either Performance or Usage. TTF models hypothesize that IT will be used if, and only if, the functions accessible to the user fit the tasks of the user. Rational, knowledgeable users will choose those tools and methods that will help them complete the task with the maximum net benefit. IT that do not offer satisfactory benefits will not be used.

2.2   *Empirical review*

2.2.1   *Telephone Banking*

Banking services using mobile phones (M-banking) have been available in developing as well as developed countries for several years, but it is not until recently that new modalities of applying M-banking started diffusing rapidly to previously unbanked people (Michael & Mayer, 2011). The main driver for the rapid development is the new M-banking services that are less expensive and have a geographical footprint defined by the reach of mobile networks in contrast to services offered by traditional retail bank branches, which are out of reach for many people in rural areas from both an economic and geographical perspective (Coetzee, Kamau & Njema, 2003). The main benefits to rural users are affordable, fast and secure transactions. M-banking access amongst previously unbanked groups is believed to have a direct, positive effect on users, since it has brought about a transition from informal to formal transactions and hence alleviated poverty and caused economic development (Coetzee *et al*;,2003)

2.2.2   *Internet Banking*

Mallick (2006) the idea of Internet banking is to give customers access to their bank accounts via a web site and to enable them to enact certain transactions on their account, given compliance with stringent security checks.Wang et al. (2003) argues that in the 1990s Internet banking technology was less-utilized as companies used it only to market their products and services. Thornton and White (2001), who studied customer orientations and usage of financial distribution channels in the Australian financial industry, established that recently majority of financial institutions, faced with competitive strain after the introduction of deregulation in 1983, have rechecked their policies to take full use of Internet technology. Tan and Teo (2000) noted that the challenge to expand and maintain banking market share has led to many banks investing more in enhanced use of the Internet. The coming up of Internet banking had made many banks recheck their IT policies in competitive markets.

2.2.3   *Electronic Fund Transfer*

Computerization in the financial sector became widespread over the last few decades as entities rapidly realized that most of the labour intensive information handling processes could be computerized (Mosongo, 2013). The first Automated Tellers Machine (ATM) was introduced in the USA in 1968 and it was only a cash dispenser (Jabnoun & Al-Tamimi, 2003). The advent of ATMs played a significant role in improving customer convenience and reducing costs and this led to improved efficiency and profitability in service delivery of the banks (Muthui, 2013).

3.   Research methodology

This study adopted a cross-sectional survey research design to identify, describe, analyze and explore effects of financial innovations on financial performance of SACCOs in Nyeri County, Kenya. The target population in this research study was all the operating SACCOs in Nyeri County. There were 56 active SACCOs operating in Nyeri County (Ministry of Cooperative Development and Marketing Central Province annual report, September 2014).

The study used a multi-stage sampling process in the selection of the sample. The initial stage was to determine the number and category of SACCOs in the sample, followed by determining the number of staff to be included in each of the two categories of staff, business development managers and section heads in each category of SACCOs (Cooper & Schindler, 2006). The stratified sample of 30 SACCOs was selected proportionately and convenience sampling method was also used in arriving at the 30 SACCOs. SACCOs operating in Nyeri County operate a centralized operating system although they have branches operating within the County and therefore this study focused on the head offices situated in Nyeri County. The staff working in SACCOs were categorized into two categories, that is, business development managers and the section heads. They were the appropriate respondents for this study because they are likely to be the most knowledgeable with respect to financial innovations and financial performance.

To arrive at a representative sample the study used a formula by Cochran (1963), and later simplified by Yamane (1967)

The formula is $n = \dfrac{N}{1 + N(e)^2}$

Where n is the sample size, N is the population size and e is the level of precision at 95% confidence level.

Thus the sample size of the study will be: $n = \dfrac{106}{1 + 106(0.05)^2} = 83.8 \approx 84$

The total sample size was therefore 84 and was distributed proportionately as presented in Table 3.3;

Table 0.26 Sample Distribution

Target Group	Population	Percentages	Sample Sizes
Business development Managers	30	28	24
Section heads	76	72	60
Total	106	100	84

A random sampling technique was used to select the sample; this ensured that each respondent of the whole population will have an equal chance of being selected.

This study used a semi structured questionnaire. The questionnaire contained open ended and close-ended questions. The former refers to questions which give the respondent freedom of response, permitting them to

respond in their own words. The close ended questions guided the respondents and restrict them to only specified choices given. To assess financial performance of SACCOs, secondary data wascollected in this study. This data was useful for generating additional information for the study from already documented data or available reports.

To test the validity and reliability of the questionnaires, a pilot study was carried out. The reason of pilot testing was to establish the accuracy and appropriateness of the research design and research instrument (Bryman, 2007 & Zikmund *et al.*, 2010). Reliability was assessed using Cronbach alpha coefficient because it has the most utility for multi-item scales at the interval level of measurement, requires only a single administration and provides a unique, quantitative estimate of the internal consistency of a scale (Cooper and Schindler, 2006). Factor analysis was done to establish the validity of the data collection tool. Montgomery, Peck and Vining (2001) indicate that a factor loading of 0.40 should be used when factor analysis is used to refined construct validity. This study used a threshold of factor loading of 0.4 to assess validity of the variable constructs.

Descriptive statistics were generated to describe the study objectives and the profile of respondents. Measures of variations were used to establish convergence of the responses. Model fitness (R^2), ANOVA and regression coefficients were used to test the study null hypothesis. Data was presented using tables and bar charts.

Results

The researcher distributed 24 questionnaires to business development managers and 60 questionnaires to section heads. Table 4.1 shows the distribution and the reponse rate. This accounts for response rate of 90% which is above the 70% threshold recommended by Mugenda and Mugenda (2012).

Table 0.27 Response rate

Target Group	Questionnaires distributed	Questionnaires returned	Response rate
Business dev. Managers	24	22	88%
Section heads	60	54	90%
Total	84	76	90%

Financial innovations in SACCOs financial system

Majority of the participants (78%) indicated that internal capabilities formed the SACCOs financial system to both very great extent and great extent. Ninety eight percent and 82% of the participants indicated that networking and technological learning ability respectively formed the SACCOs financial system to both very great extent and great extent. Environmental factors were also found to form the SACCOs financial system to a both very great extent and great extent according to 70% of the participants.

Table 0.28 Financial innovations in SACCOs financial system

Financial system	No extent	Little extent	Moderate extent	Great extent	Very great extent
Internal capabilities	2%	8%	12%	36%	42%
Networking	-	-	2%	40%	58%
Technological learning ability	-	6%	12%	36%	46%
Environmental factors	-	14%	16%	38%	32%

Financial Services offered through Telephones

All participants (100%) indicated that balance enquiries were offered to both very great extent and great extent. Money transfers (80%) and mini statements (72%) were also offered to both very great extent and great extent. However, automatic advice to clients on credit/debits and airtime purchase was offered to a little extent.

Table 0.29 Financial Services offered through Telephones

Financial services	Little extent	Moderate extent	Great extent	Very great extent
Balance enquiry			44%	56%
Money transfer	8%	12%	38%	42%
Mini-statement	16%	12%	38%	34%
Automatic advices to clients on credits/debits and airtime purchase	48%	11%	19%	22%

Aspects of internet banking

Findings in Table 4.8 indicate that capital requirements (60%), operational risks (62%), regulatory requirements (82%), profitability (90%), minimum bank reserves (94%) and customer base reach (84%) were the aspects of internet banking that influenced financial performance of SACCOs to both very great extent and great extent

Table 0.30 Aspects of internet banking

Aspects of Internet Banking	No extent	Little extent	Moderate extent	Great extent	Very great extent
Capital requirements	8%	12%	20%	27%	33%
Operational costs	10%	28%	12%	7%	43%
Competition		22%	28%	26%	24%
Operational risk		20%	18%	24%	38%
Regulatory requirements		9%	9%	20%	62%
Profitability	4%	6%		12%	78%
Minimum bank reserves		6%	10%	28%	56%
Customer base/reach		8%	8%	20%	64%
Customer relations	10%	20%	8%	18%	44%

Aspects of ATM banking

Findings in Table 4.9 indicate that funds withdrawals (62%), accounts enquiries (78%), funds transfers (68%) and customer convenience (88%) were all aspects of ATM banking that affected financial performance of SACCOs to both very great extent and great extent.

Table 0.31 Aspects of ATM banking

Aspect	No extent	Little extent	Moderate extent	Great extent	Very great extent
Funds withdrawals			8%	30%	62%
Accounts enquiries		4%	6%	12%	78%
Funds transfers			4%	28%	68%
Customer convenience			12%	10%	88%
Operating costs	9%	9%	12%	26%	44%

The researcher carried out regression analysis. The purpose of the regression was to establish the combined influence of telephone banking, internet banking and electronic fund transfer on financial performance of SACCOs in Nyeri County.

Table 0.32 Model summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.929[a]	.863	.779	.014

a. Predictors: (Constant), Telephone banking, internet banking, electronic funds transfer

Table 4.11 shows the model summary of linear regression. Coefficient of Determination(R^2) shows the variation in the dependent variable that is due to change in the independent variables. According to the table above the value of R^2 was found to be 0.863, this shows that variation of 86.3% of the financial performance of SACCOS can be attributed to financial innovation. In other words, telephone banking, internet banking and electronic fund transfer have a combined influence of 86.3% on financial performance of SACCOs in Nyeri County.

Table 0.33 ANOVA results

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	37.070	3	12.357	24.226	.000[b]
	Residual	56.617	111	.510		
	Total	93.687	114			

From the ANOVAs results in Table 4.12, the probability value obtained was less than α=5% which implied that that the regression model was significant in predicting the relationship between financial innovations and the financial performance. The F calculated at 5% level of significance was 24.26. Since F calculated is greater than the F tabulated = 5.409, this shows that the overall model was significant. The researcher therefore rejected the fourth hypothesis and concluded that telephone banking, internet banking and electronic fund transfer jointly influence on financial performance of SACCOs in Nyeri County.Regression analysis was also carried out to test the study's hypothesis

Table 0.34 Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.0356	.247		3.866	.000
	Telephone banking	.720	.105	.555	6.856	.000
	Internet banking	.446	.167	.278	2.172	.032
	Electronic funds transfer	.059	.059	.086	1.010	.315

Table 4.13 shows the coefficients and P values for the variables in the study. Findings show that telephone banking (p=0.000) and internet banking (p=0.032) were statistically significant at 95%. The researcher therefore rejects the first null hypothesis and concludes that there is a relationship between telephone banking and financial performance of SACCOs in Nyeri County. The research also rejects the second null hypothesis and concludes that there is a relationship between internet banking and financial performance of SACCOs in Nyeri County. However, the researcher fails to reject the third null hypothesis and concludes that there is no relationship between electronic fund transfer and financial performance of SACCOs in Nyeri County

Substituting the coefficients in the model,

$Y = \alpha_0 + \alpha_1 X_1 + \alpha_2 X_2 + \alpha_3 X_3 + \epsilon$

Y = 0.0356+0.720 Telephone banking + 0.446 Internet banking+ 0.059 Electronic funds transfer

The coefficients mean that without financial innovation, the financial performance of SACCOs would be 3.5%. The findings' also indicate that unit change in telephone banking would result in 72% increase in financial performance of SACCOs whereas a unit change in internet banking would result in a 44.6% change in financial performance of SACCOs.

Conclusion and Recommendations

The researcher concludes that there is a relationship between financial innovations and the financial performance of SACCOs in Nyeri County. The researcher also concludes that telephone banking and internet banking are the main drivers of the financial performance of SACCOs. SACCOs which utilize telephone banking are more likely to be profitable than those who do not embrace it. In addition, SACCOs which utilize internet banking are more likely to perform well financially than those who do not. Financial innovation leads to better financial performance through enhanced service delivery, improved customer convenience and satisfaction as well as increases geographical coverage and reach to previously unbanked population.

SACCOs should increase the number of services possible through mobile phones to include services such as provision of loans. This will increase the number of customers and transactions and therefore more profit. SACCOs should encourage their customers to use the internet in banking. Internet banking has the advantage of carrying more information than mobile banking and therefore banks can communicate more with their clients.

More investment should go into mobile and internet banking since the two drive profitability as opposed to ATM banking. Enhancement of financial innovation in SACCOs should be accompanied by installation of high grade security features and staff training. SACCOs should seek to integrate all financial innovations to one platform so that customers can interact with their SACCO from a single point.

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