

Determinants of Financial Inclusion Strategies Adoption by Savings and Credit Cooperatives in Kirinyaga County

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ABSTRACT

This study sought to analyse determinants of adoption of financial inclusion strategies in SACCOs in Kirinyaga County. Specifically, the study sought to analyze the effect of financial resources, and loan repayment on adoption of financial inclusion strategies. The study was guided by the theory of the firm and information asymmetry theory. The target population was SACCOs in Kirinyaga County. Purposive sampling was conducted to recruit study a sample of 246 persons. Primary and secondary data were collected. Descriptive methods (frequencies, percentages, mean and standard deviation) were used to analyse data. Regression analysis was conducted to assess relationships between variables and test hypotheses. Findings were presented in the form of tables and figures. ANOVA test revealed that selected variables were significant ($p=0.00$) to financial inclusion in SACCOs. The findings indicated that the variables under investigation contributed 63% to financial inclusion. The findings showed that financial resources ($p=0.00$) and loan repayment ($p=0.00$) were all significant at 95% confidence level. The study concluded that the determinants of financial inclusion in order of magnitude are financial resources and loan repayment. The study recommended that more SACCOs should embrace utilization of credit reference bureau.

Keywords: Financial inclusion, Financial Resources, Loan Repayment, Regulation Framework, SACCOs

1. Introduction

Financial inclusion refers to the absence of price or non-price barriers in the use of financial services (Anupama & Kukreja, 2013). Chakrabarty (2010) views financial inclusion refers to the delivery of financial services of an economy to its inhabitants. Gardeva and Levai (2010) define financial inclusion as a state in which people who can use them and have access to full suite of quality financial services, provided at affordable prices, in a convenient manner, and with dignity for clients. Financial exclusion is hence the incapability of individuals, households or groups to get essential financial services in an appropriate manner (Lämmermann, 2011).

Collins, Morduch, Rutherford and Ruthven (2009) denote that financial inclusion has become all the more critical as studies have increasingly revealed that poor people, notwithstanding their low incomes and small amount of funds present at hand, actively manage and diversify their portfolios into different financial products albeit outside the formal financial system. The Council Of Economic Advisers (2016) add that financial inclusion can lead to better outcomes for both individuals and economies, including greater investment in education and businesses, better health, lower inequality, and greater entrepreneurship. Lack of access to safe and affordable financial services which include payment settlement, credit intermediation, and maturity transformations, provided to consumers by a range of financial institutions is not only costly but is also significantly more common for lower-income households.

Savings and Credit Co-operative Societies (SACCOs) are Co-operative Societies registered and operating under the SACCOs Act (Republic of Kenya, 2008). They generally undertake savings and credit functions. A Co-operative Societies is an association of persons who have come together with a common purpose of pooling their resource for mutual economic and social benefit (Wamburu, 2011). According to Henama (2012) there is no difference between a credit union and a SACCO. However, the term “credit union” is generally not used in Africa to avoid confusion with the various labour movements. In Kenya, co-operatives contribute 45% of the Gross Domestic Product (GDP) and 31% of the total national savings and deposits (Wamburu, 2011). Co-operatives control 70% of the coffee market, 76% of the dairy market and 95% of the cotton market.

Savings And Credit Co-operatives (SACCOs) can reach customers and areas that are unappealing to banks, such as customers in rural areas. Different from most micro-credit providers, SACCOs marshal significant volumes of personal savings and direct them into small loans for productive and prudent purposes at community level and their strong base of small savings accounts establishes a stable, relatively low-cost funding source (Kuugongelwa-Amadhila, 2015). SACCOs encourage a savings culture besides providing members credit facilities to engage in income-generating activities, or to pay school fees for their children which help improve their standards of living. However, Makori, Munene and Muturi (2013) report that this image of SACCOs as organisations established for the disadvantaged results in their not being attractive to the people they are designed to serve.

Kirinyaga County is one of the 47 counties in Kenya bordering Nyeri County to the North West, Murang’a County to the West and Embu County to the East and South. It covers an area of 1,478.1 square kilometres. From the Kenya Population and Housing Census 2009 report, the population of the county stood at 528,054 persons with an annual growth rate of 1.5 percent (Kenya National Bureau of Statistics, 2010). Agriculture is the most important activity in the county with 87 percent of the total population deriving their livelihood from the sector and accounting for 72 percent of household income. The number of wage earners in the county stands at 22,828 persons, the bulk of these get their subsistence from the agricultural and construction sectors. The number of unemployed people in the county stands at 67,003 persons with 32,951 being male and 34,052 being female, this constitutes 19.8 percent of the total labour force who are predominantly youth.

1.1 Statement of the Problem

Available studies on Kirinyaga county show that financial inclusion is very low with only a few people accessing services from SACCOs. For instance, Mwaniki (2011) found that majority of women prefer to be members of informal financial groups (*chamas*). Mwari (2014) found that SACCOs were not effective in empowering motorcycle women entrepreneurs in Kerugoya town, Kirinyaga County. A study by Makori et al. (2013) found that majority of small and micro enterprises in the county were unable to access credit from SACCOs. These studies suggest that the vibrant SACCO sector has failed to bring the disadvantaged into the formal financial services bracket.

The high number of financially excluded people is a problem because lack of access to financial services such as credit and savings reduces households' ability to invest, save and respond to shocks. In addition, a lack of financial inclusion has broader consequences for the macroeconomy, having the potential to hurt both equity and efficiency by reducing access to credit, which can be essential for entrepreneurship, homeownership, and economic development more broadly. SACCOs have a key role to play in ensuring Financial Inclusion. They enjoy greater acceptability among the poor and have flexibility in operations providing a level of comfort to their clientele. A study is therefore necessary to analyse determinants of adoption of financial inclusion strategies in SACCOs.

1.2 Objectives of the Study

- i. To analyze the effect of financial resources on financial inclusion strategies adoption by SACCOs in Kirinyaga County
- ii. To analyze the effect of loan repayment on financial inclusion strategies adoption by SACCOs in Kirinyaga County

1.3 Hypotheses

- HO₁ There is no significant relationship between financial resources and financial inclusion strategies adoption by SACCOs in Kirinyaga County
- HO₂ There is no significant relationship between loan repayment and financial inclusion strategies adoption by SACCOs in Kirinyaga County

2 Literature Review

2.1 Theoretical Review

Theory of the Firm

The theory of the firm can be traced to Coase (1937). In a nutshell, the theory proposes that that firms (corporations) exist and make decisions in order to maximize profits. This theory is built on the reasonable notion that people endeavour to do as well as they can for themselves, given the constraints facing them. Profits are achieved when a firm's revenue is greater than its engenderment costs.

A profit-maximizing firm culls both its inputs and its outputs with the sole goal of achieving maximum economic profits. As such, if firms are stringently profit maximizers, they will make decisions in a "marginal" way (Blair, 1992). According to Braendlle (2005), for the parties

involved, the goal is a trade-off in terms of maximizing the gains of the transaction whilst endeavouring to minimize transaction costs.

SACCOs are in the business of safeguarding cash and other valuables for their members besides providing loans and offering investment financial services. The SACCO aims to make a profit to sustain its operations as well as provide adequate dividends to the shareholders. SACCOs consequently subsist for profit maximization. The management of SACCOs consequently make decisions which in their view will lead to incremented profits to enhance the financial resources of the institution. This theory is therefore relevant to the study in that it sought to analyse the effect of financial resources on adoption of financial inclusion strategies by SACCOs in Kirinyaga County.

Information asymmetry theory

The information asymmetry theory is credited to the works of George Akerlof, Michael Spence and Joseph Stiglitz (Wilson, 2008). In simple terms, the theory proposes that an imbalance of information between buyers and sellers can lead to inefficient outcomes in certain markets. Information asymmetries and the resulting credit constraints have been used to expound inconsistent deeds in consumption, borrowing, and labor supply (Dobbie & Skiba, 2013). In credit markets, asymmetric information predicaments arise when borrowers have private information about their creditworthiness that is not overt by lenders (Hörne, 2008).

Information Asymmetry can lead to two main predicaments: adverse selection and moral hazard (Izquierdo & Izquierdo, 2007). "Adverse selection" transpires when information related to the borrower's credit, project risk and benefits are ken more by borrowers than financial institutions (Wang, 2012). In other words, the borrowers have a relative information advantage. Moral hazard in financial markets occurs when the borrower has already acquired the imprest. In other words, as banks cannot consummately ken and control what indeed the borrowers use loans for and whether they would pay the cash back or not, the borrowers are liable to take risks to default on the engagement (Huang et al., 2014).

The information asymmetry predicament is consequently applicable in the context of this study which sought to establish the effect of loan repayment on adoption of financial inclusion strategies by SACCOs in Kirinyaga County. Lending is the main income avenue for SACCOs, it is the accommodation that attracts most customers. However, this activity is faced with a number of dangers not the least information asymmetry (Gerhard, 2012). The SACCO is unable to supervise the borrowing company all the time and obtain efficient information about the borrower's nature to pay back loans. This may lead to non-performing loans, reducing performance and therefore financial inclusion may not be achieved.

2.2 Empirical Review

Financial Resources and Financial Inclusion

Financial resources refers to the funds available to an organization for spending in the form of funds, liquid securities and credit lines. Financial resources concern the facility of the business to "finance" its culled strategy (Wang, 2010). Fry et al. (2004) stipulates that financial resources are fundamental resources that can be habituated to acquire other resources such as

purchasing equipment, paying workers, and buying advertising. The term “financial resource” is can include a firm’s interest in a discretionary trust and the competency of the firm to raise funds, such as by borrowing. It will fundamentally include resources which have the competency to engender an income.

Fonseka *et al.* (2013) investigated whether access to different financial capital sources offers competitive advantages in China's highly regulated market. They study 6750 firm-year observations from 2000-2009. Regression analysis showed that firms increased competitive advantages when they can access internal and external financing in equities, bonds and equity-financed capital. Financial industry modifications benefit immensely private and government -owned firms. Regional institutional developments avail to access sources of external financial capital.

Uzzi *et al.* (2002) examined how the competencies and resources of one corporate actor in a network are transferred to another actor that uses them to enhance transactions with a third actor—a strategic process we dub ‘network transitivity.’ Converging on the properties of network transitivity in the context of diminutive-firm corporate finance, the study considered how embedded cognations between a firm and its banks facilitate the firm’s access to distinctive capabilities that enable it to strategically manage its trade-credit financing relationships. Utilizing an immense-scale data set, the authors tested the generalizability of their hypotheses. Qualitative analyses show that embedded bank–firm ties provide special governance arrangements that facilitate the firm’s access to bank-centered informational and capital resources, which uniquely enhance the firm’s facility to manage trade credit. Consistent with the authors’ arguments, the statistical analyses showed that diminutive- to medium-sized firms with embedded ties to their bankers were more liable to take lucrative early-payment trade discounts and avoid costly tardy-payment penalties than were homogeneous firms that lacked entrenched ties—suggesting that convivial embeddedness beneficially affects the financial performance of the firm.

Njeru *et al.* (2015) sought to explore the effect of cash management on financial performance of deposit taking SACCOs in Mount Kenya Region. Quantitative data was amassed by utilization of self-administered structured questionnaires. The researcher also used secondary data derived from the audited financial verbalization of the SACCOs and the regulator (SASRA). The data gathered was analyzed, with reverence to the study objectives, utilizing both descriptive and inferential statistics. There was a Vigorous positive relationship between cash management and Financial Performance of Deposit taking SACCOs in Mount Kenya Region as showed by correlation of 0.584.

Chege (2016) investigated the effect of financial management practices on the performance of SACCOs in the hospitality industry. Statistical Package for Social Science (SPSS) was acclimated to perform correlation analysis that was acclimated to establish the degree of relationship between respondents' opinion on the three research objectives. The study found that majority of the SACCOs had adopted financial management practices that contribute to the performance of the SACCOs. Cash management policies have contributed to enhancing the liquidity of the SACCOs, ascertaining loans are disbursed upon approbation resulting to increment in

profitability through the interest. The study additionally revealed that only a few SACCOs invested excess cash on marketable securities. The study found that most SACCOs have a credit management policy which is crucial in laying down guidelines and procedures on how to manage the variety of loan products offered by the SACCOs and minimize credit threat.

A study by Wang (2010) found that a firm that is able to raise internal capitals relishes competitive advantage by reducing financing charges and self-financing highly remuneratively lucrative investments. Morgan et al. (2004) study established that financial resources such as cash in hand, bank deposits or savings and financial capital (stocks and bonds) avail explicate the capacity of SACCO competitive advantage and performance. Clarke (2002) study found that competitive mobility emanates from being able to raise funds expeditiously and ecumenically, by knowing when to divest and at what price and which opportunities to embrace. Validus (2016) withal established that price volatility and ambiguity increase in markets such as foreign exchange and commodities, a vigorous financial risk management capability can increasingly become a source of competitive advantage in its own right.

A study by Uzzi and Gillapsi (2002) found that firms with better access to bank financing are better able to manage trade credit and are more liable to gain advantage from early payment discounts and evade delayed payment penalties. In another study, Wiklund and Shepherd (2005) found that financial resources seem to have a great prominence to diminutive firms and they have also found that entrepreneurial and learning strategies require considerable financial resources to have prosperity. Bell (1997) found that financial constraints, such as export financing resources, currency fluctuations and delays in payments, can decrement international capabilities of minute innovative firms. The current study therefore sought to analyze the effect of financial resources on financial inclusion strategies adoption by SACCOs in Kirinyaga County. The study hypothesised that there was no significant relationship between financial resources and financial inclusion strategies adoption by SACCOs in Kirinyaga County

Loan Repayment and Financial Inclusion

Loan repayment is the process of the borrower paying back the imprest and interest on the concurred terms and conditions. This may be weekly, bi-weekly or monthly depending on the concurred terms between the two parties and the repayment schedule drawn to the followed. A good repayment enhances confidence in the client and withal is a symbol when assessing a client to qualify for enormous loans in future if need arises but sometimes these schedules are not followed by the borrower leading to defaulting (Mirembe, 2011).

Njeru *et al.* (2015) study sought to explore the effect of Loan Repayment on financial performance of deposit taking SACCOs in Mount Kenya Region. Primary quantitative data was gathered by utilization of self-administered structured questionnaires. The researcher also used secondary data derived from the audited financial verbal expression of the SACCOs and the regulator (SASRA). The data amassed was analysed, with reverence to the study objectives, utilizing both descriptive and inferential statistics. The researcher concluded that there is necessity for the regulator to introduce credit policy for the sector, this will avail in controlling credit risks among the SACCOs in the sector and reduce credit exposure on guarantors.

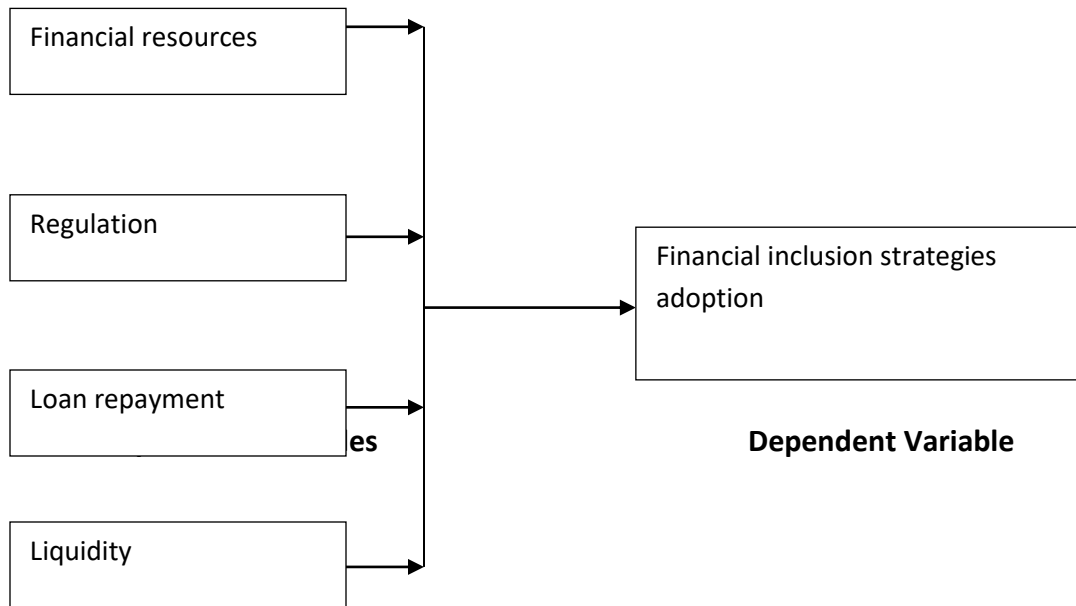
Using financial statements data for the year 2012, from 36 SACCOS in Kilimanjaro Region, Tanzania, and using descriptive statistics and regression models in the analysis, Ondiege (2016) study examined the relationship between financial performance and loan repayment capacity. It examined the extent by which SACCOS were capable of recuperating the imprest issued and additionally the financial ratios that expound loan repayment capacity in SACCOS. The study depicted that there was a rigorous financial risk management quandary among Tanzanian SACCOS. Concentrating on sustainability was paramount for enhancements of loan repayment, but focusing on profitability in SACCOS resulted to an adverse loan repayment.

Magali (2014) used 496 loans from ABC rural SACCOS located in the Northern zone of Tanzania to describe the effectiveness of loan's portfolio management. The data analysis is done by applying the multivariate regression, descriptive and qualitative methods. The findings showed that loans were aged into 4 classes and the imprests aging was not very efficacious because loans of different ages were relegated in a single class. The results from the regression analysis reveal that the quality of loan portfolio was positively influenced by the imprest size while the influence of gender and location of the borrowers were not consequential. Moreover, ABC rural SACCOS used portfolio diversification, collateral, guarantors, letter from the village/ward regime offices and the affidavit from the lawyer as credits risk mitigation techniques. The findings additionally revealed that fluctuation of the price of agricultural engender threatened the quality of loan portfolio.

Mutua (2016) focused on the credit risk management on financial performance in savings and co-operative societies in Kitui County. This study was undertaken in Kitui County, Kenya where the researcher predicated the research on financial performance and in categorical Savings and Credit Co-operative societies (SACCOs). The research design applied in this study was a descriptive research design. The study used quantitative method to analyse the data and examine the simultaneous impact of the independent variables on the dependent variable. The findings of the study were; there was a very vigorous positive relationship between credit monitoring and financial performance of SACCOs, there is a very vigorous positive relationship between loan policy in mitigation of peril and financial performance of SACCOs, there is a very vigorous positive relationship between loan defaulters and financial performance of SACCOs. Whereas several studies on loan repayment in SACCOs exist, none has addressed its effect on financial inclusion. This study sought to found out the effect of loan repayment on adoption financial inclusion strategies by SACCOs in Kirinyaga County. The study hypothesized that there was no significant relationship between loan repayment and financial inclusion strategies adoption by SACCOs in Kirinyaga County.

2.3 Conceptual framework

The conceptual framework shows the variables in the study. The conceptual framework represents the researcher's synthesis of literature on how to explain determinants of adoption of financial inclusion strategies by SACCOs. The framework helps guide the project to ensure that the research stays on track. The independent variables in the study are financial resources, regulation, loan repayment and liquidity while financial inclusion is the dependent variable.



The determinants are represented by variables, financial resources regulation, loan repayments and liquidity management. The dependent variable measurements were based on the level of credit granting to the disadvantaged groups. Financial resources such as cash in hand, bank deposits or savings and financial capital (stocks and dividends) avail explicate the caliber of SACCO competitive advantage and performance. This enables a SACCO to lend more and invest more in marketing activities that culminate in more members and consequently enhance financial inclusion. Despite the recent magnification in the SACCO sector, the institutions are faced with challenges of loan repayment defaults by clients. Income from interest paid on loans is the main source of revenue for SACCOs, consequently low loan repayment contradicts SACCOs finances to lend and invest in incipient member recruitment thereby bringing down financial inclusion.

2.4 Gaps to Be Filled

From the reviewed relevant literature it has emerged that different researchers like Macharia (2013), Wang (2012), Fujo & Ali (2016) fortified the fact that the financial inclusion in the SACCOs has not been opportunely yielded the expected returns in the SACCO. Their arguments are ordinary that if the SACCOs are not able to fortify the disadvantaged group in the society there investment faculty will be hampered. Other scholars have a different approach and view and conclusions towards the financial inclusion. Morgan (2004), Mwanja (2014), Ondiege

(2016), Mushila (2012), Mirembe (2011) verbally expressed that financial omission does not exclusively contribute towards failure by the potential SACCO members be less creditworthy. But both categories of researcher have no conclusion relating to financial inclusion strategies adoption by the SACCOs. Thus varied results, omissions, and divergent views from different scholars, countries and entities are mainly as a result of lack of comprehensive analysis of financial inclusion in the SACCO thus need for this study

SACCOs through the various models are helpful for the development of lower income group people, thereby indirectly fulfilling the purpose of financial inclusion. However, despite the importance of SACCOs as a tool for financial inclusion, and the prevailing low financial inclusion status in the country, few studies have focused on this aspect. Available studies have concentrated on the effect of various variables on the performance of SACCOs. However, it is important to address financial inclusion since it can lead to better outcomes for both individuals and economies, including greater investment in education and businesses, better health, lower inequality, and greater entrepreneurship. This is the motivation behind the study which sought to analyze determinants of financial inclusion strategies adoption by SACCOs in Kirinyaga County.

3 Research Methodology

3.1 Research Design

The study employed a descriptive cross-sectional survey design. Descriptive cross-sectional survey design was which is concerned with describing the characteristics of a particular individual or a group.

3.2 Target Population and Sampling Procedure

Target population refers to all members of a real or hypothetical set of people, events or objects to which a researcher wishes to generate results from the study (Burns, 2010). SACCO managers and section heads (HR, IT, marketing, finance and credit) were the respondents in the study.

Table Error! No text of specified style in document..**1 Target Population**

Population	Number
SACCOs	41
Managers	52
Section heads (HR, IT, marketing, finance and credit)	232

Source: SASRA (2015).

All 41 SACCOs were considered. This is because the population of SACCOs (41) was rather small and all the SACCOs were easily accessible since their main branches are located in or within Kerugoya town. Purposive sampling was used whereby from each SACCO the manager and 5 heads of departments (HR, IT, marketing, finance and credit) were recruited in to the study. Therefore, from each SACCO, 6 persons (1 manager and 5 section heads) were interviewed giving the study a sample of 246 persons.

3.3 Data Collection

The study involved primary and secondary data. Primary data was collected using a self-administered questionnaire. The questionnaire had both closed and open ended questions. Secondary data was sourced from SACCO financial reports and SASRA supervisor reports.

3.4 Data Analysis

Univariate analysis which is the distributional properties of a variable were carried out for each variable to describe that variable as a preparation for multivariate analysis. This is quantitative analysis where each variable was analyzed independently. This analysis was achieved using descriptive statistics (frequencies, percentages, mean and standard deviation) which is the assessment of central tendency (convergence) and of dispersion (divergence). The data was presented in the form of tables and charts. This study employed multiple linear regressions in its multivariate analysis. SPSS software was used to analyze data.: Presentation of the findings was done through tables and graphs.

$$Y = C + \beta_1 FR + \beta_2 RF + \beta_3 LR + \beta_4 LQM + e$$

Where: Y = Financial Inclusion, C = Constant $\beta_1 - \beta_4$ = Co-efficient, FR = Financial resources LR = Loan Repayment, e = error term

4 Data Analysis, Presentation And Interpretation

4.1 Response Rate

Out of 246 questionnaires distributed, 226 were returned. This represents a response rate of 92% which is higher than the 70% threshold recommended by Mugenda and Mugenda (2012).

Table Error! No text of specified style in document..2 Response Rate

Population	Questionnaires distributed	Questionnaires returned	Response rate
SACCO managers	41	37	90%
Heads of departments	205	189	92%
Total	246	226	92%

4.2 Financial Inclusion

Findings showed that 44% of respondents indicated that their SACCO had between 1,001 and 5,00 members while 20% had less than 1,00 members. The findings show that 36% of respondents indicated that their SACCO had recruited over 1,000 members in the previous financial year whereas 26% had recruited less than 100 new members. Majority (69%) of their respondents indicated that financial inclusion was high with 30% indicating that it was very high. The findings therefore show that although the respondents perceived the financial inclusion to be high the number of active members and new customer was low.

Table Error! No text of specified style in document..3 Financial inclusion in SACCOs in Kirinyaga County

	Category	Frequency	Percentage
Active members	< 1,000	45	20%
	1,001 – 5,000	99	44%
	5,0001 – 10,000	39	17%
	> 10,000	43	19%
	Total	226	100%
Newly recruited members	>100	59	26%
	101-500	41	18%
	501-1,000	44	20%
	>1,000	82	36%
	Total	226	100%
Rating of financial inclusion	Very high	68	30%
	High	88	39%
	Moderate	70	31%
	Total	226	100%

Source: Field Data (2016)

4.3 SACCO's Financial Resources

Majority (82%) of the respondents in the study indicate that members' deposits' were the main sources of capital for their SACCO. The findings therefore show that loan portfolio performance was poor since interest paid on loans accounted for a small percentage (41%) of the income of SACCOs.



Figure Error! No text of specified style in document..1 Main source of Capital

Findings in table 4.3 show that 43% of the SACCOs in the study had a capital base of between KES 1 million and KES 50 million; 22% of the SACCOs had a capital base of 51 and 100 million Kenya shillings. The findings therefore show that SACCOs in Kirinyaga county had a small capital base.

Table Error! No text of specified style in document..4 SACCO's Capital Base

Capital base (millions of Kenya shillings)	Frequency	Percentage
1-50	98	43%
51-100	50	22%
101-250	21	9%
>250	57	25%
Total	226	100%

Half (50%) of the respondents indicate that SACCOs had a moderate access to bank loans while 48% indicated that they had a high access to bank loans as shown in Table 4.4. The findings therefore show that SACCOs in Kirinyaga county had a fairly healthy access to bank loans to help them access funds for development and therefore enhance financial inclusion.

Table Error! No text of specified style in document..5 Access to Bank Loans

Access	Frequency	Percentage
Very high	40	18%
High	67	30%
Moderate	106	50%
Low	13	6%
Total	226	100%

Majority (68%) of the respondents indicated that their SACCO had invested in shares while 30% indicated that they had invested in real estate. The findings therefore show that SACCOs in Kirinyaga County had not diversified their investments.

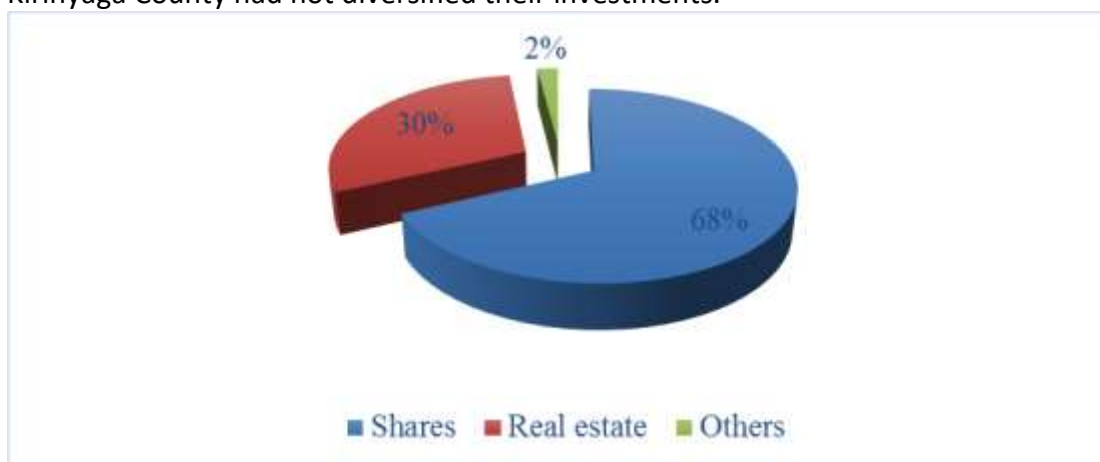


Figure Error! No text of specified style in document..2 SACCOs' Investments

An overwhelming majority (95%) of respondents indicated that financial resources affected financial inclusion to large extent with 36% indicating that the effect was to a very large extent. This shows that the respondents in the study recognize the importance of financial resources in increasing membership for SACCOs.

Table Error! No text of specified style in document..6 Effect of financial resources on financial inclusion

Extent	Frequency	Percentage
Very large	82	36%
Large	133	59%
No	4	2%
Small	7	3%
Total	226	100%

Source: Field Data (2016)

4.4 SACCOs' loan repayment and financial inclusion

All (100%) respondents in the study agreed that loan appraisal procedures were thorough and continuous. An overwhelming number (94%) of respondents agreed that loans were classified from non performing to well performing. The findings also show that majority (66%) of the respondents agreed that their SACCO makes use of the credit reference bureau in credit management. The mean values and standard deviation values show a high agreement and convergence of views among respondents indicating that SACCOs in Kirinyaga county had good loan portfolio management.

Table Error! No text of specified style in document..7 SACCOs' loan procedures

	SA	A	U	D	SD	\bar{x}	s^2
Loan appraisal procedures are thorough and continuous	71%	29%				1.29	0.456
Loans are classified from non performing to well performing.	52%	42%	6%			1.54	0.608
The SACCO makes use of the credit reference bureau in credit management	27%	39%	18%	14%	3%	2.29	1.1

Majority (78%) of respondents indicated that loan repayment was good with 6% indicating that loan repayment was very good. This shows that loan portfolio performance among SACCOs in Kirinyaga was high.

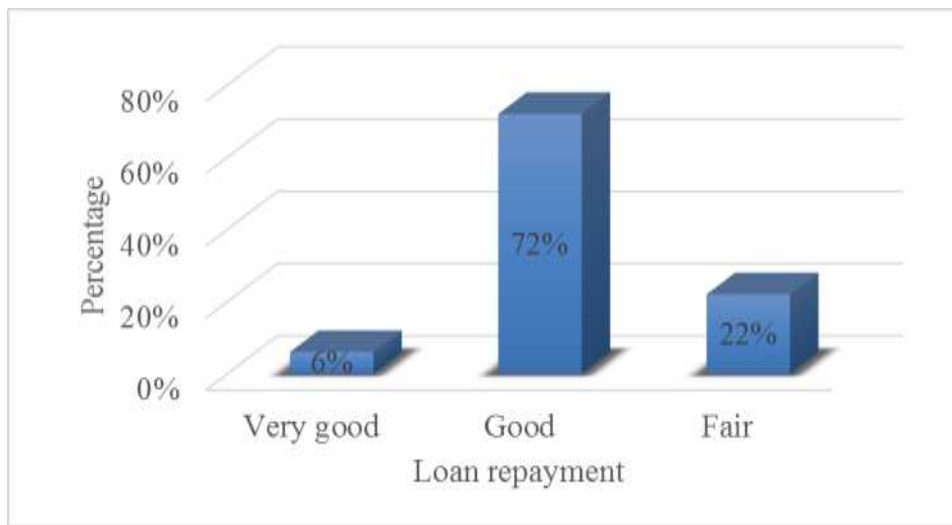


Figure Error! No text of specified style in document..3 Rating Of Loan Repayment

Majority (80%) of the respondents indicated that loan repayment had a large effect on financial inclusion with 35% indicating that the effect was to a large extent. This shows that majority of respondents considered loan repayment an important element in adoption of financial inclusion strategies.

Table Error! No text of specified style in document..8 Effect of loan repayment on financial inclusion

Extent	Frequency	Percentage
Very large	80	35%
Large	101	45%
No	21	9%
Small	24	11%
Total	226	100%

4.4 Regression Analysis and Hypothesis

The study conducted regression analysis to establish determinants of adoption of financial inclusion strategies by SACCOs in Kirinyaga County. Regression analysis helped in testing hypothesis.

Table Error! No text of specified style in document..9 Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
	.795	.631	.625	.0616

The model summary in Table 4.8 shows the R value is 0.795. This means that there is a strong positive correlation between the variables investigated in the study and financial inclusion. The R^2 value of 0.631 indicates that the variables under investigation contribute 63% to financial inclusion. This shows that financial resources and loan repayment contribute to over half of the financial inclusion in SACCOs.

Table Error! No text of specified style in document..10 ANOVA Output

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	143.728	4	35.932	94.588	.000
Residual	83.953	221	.380		
Total	227.681	225			

The ANOVA table shows the F value which indicates the how well the regression equation accounts for variability in the response variable. The F value (94.588) is significant (p=0.00) at 95% confidence level. This shows that independent variables are significant to financial inclusion in SACCOs. The findings therefore indicate that the model adopted is valid for predicting financial inclusion.

Table Error! No text of specified style in document..11 Beta Coefficients

Model	Unstandardized Coefficients		Standardized Coefficients		t	Sig.
	B	Std. Error	Beta			
(Constant)	.066	.235			2.840	.005
FR	.649	.043	.652		14.986	.000
LR	.396	.084	.425		4.733	.000

Table 4.10 shows the regression coefficients that can be substituted in the model of the study as shown below.

$$Y = 0.066 + (0.649*FR) + (0.396*LR) + 0.0616$$

Where: **Y** = Financial Inclusion, **FR** = Financial resources and **LR** = Loan Repayment

The findings show that the constant value which indicates that without financial resources, and loan repayment financial inclusion would be 0.0616. The findings also show that a unit change in financial resources would result in a 0.649 change in financial inclusion. The findings therefore show that the determinants of financial inclusion in order of magnitude are financial resources and loan repayment. The error term indicates that 0.0616 of financial inclusion can be explained by other variables not included in this study. Table 4.10 also shows the significance values which can be used to test the hypothesis of the study as shown in Table 4.11.

Table Error! No text of specified style in document..12 Hypothesis decision table

Variables tested	Sig	Interpretation	Decision on Ho
Financial resources and financial inclusion	0.00	Significant	Reject
Loan repayment and financial inclusion	0.00	Significant	Reject

The findings show that financial resources (p=0.00) and loan repayment (p=0.00). Both hypotheses are therefore rejected and the study concludes that there is a significant relationship between financial resources and adoption of financial inclusion strategies and

there is a significant relationship between loan repayment and adoption of financial inclusion strategies.

4.5 Discussion of Findings

4.5.1 SACCOs' financial resources and financial inclusion

The study sought to analyse the effect of financial resources on adoption of financial inclusion strategies by SACCOs in Kirinyaga County. The study found that members' deposits were the main sources of capital for their SACCO, 43% of the SACCOs in the study had a capital base of between KES 1 million and KES 50 million; 22% of the SACCOs had a capital base of 51 and 100 million Kenya shillings. Half (50%) of the respondents indicate that SACCOs had a moderate access to bank loans while 48% indicated that they had a high access to bank loans. Majority (68%) of the respondents indicated that their SACCO had invested in shares while 30% indicated that they had invested in real estate. Financial resources ($p=0.00$) were statistically significant at 95% confidence level. The findings therefore show that SACCOs in Kirinyaga County had a fairly solid financial resources and this enabled them to adoption financial inclusion strategies. The findings are in disagreement with Chege (2016) who found that only a few SACCOs invested excess cash on marketable securities. The findings are in agreement with Fonseka *et al.* (2013) who found that firms gained competitive advantages when they can access internal and external financing in equities, bonds and equity-financed capital. The findings are also in agreement with findings of Wiklund and Shepherd (2005) that financial resources seem to have a great importance to small firms and they have also found that entrepreneurial and learning strategies require considerable financial resources to have success.

4.5.2 Loan Repayment and Financial Inclusion

The study sought to find out the effect of loan repayment on adoption of financial inclusion strategies by SACCOs in Kirinyaga County. The study found that majority (78%) of respondents indicated that loan repayment was good with 6% indicating that loan repayment was very good. Loan appraisal procedures were found to be thorough and continuous and loans were classified from non performing to well performing. SACCOs in the study made use of the credit reference bureau in credit management. Loan repayment ($p=0.00$) was statistically significant at 95% confidence level. The findings of the study showed that SACCOs in Kirinyaga county had a good loan portfolio management which translated to high loan repayment ensuring good financial performance, sustainability and therefore ability to adoption of financial inclusion strategies. The findings are therefore in agreement with Mutua (2016) who found that there was a very strong positive relationship between credit monitoring and financial performance of SACCOs, there is a very strong positive relationship between loan policy in mitigation of risk and financial performance of SACCOs, there is a very strong positive relationship between loan defaulters and financial performance of SACCOs. The findings are however in disagreement with Munene and Nguyo (2013) who indicated that despite the recent growth in the Micro-finance sector, the sector is faced with challenges of loan repayment defaults by clients.

5 Conclusions

Financial resources are a determinant of adoption of financial inclusion strategies by SACCOs. Out of the four variables in the study, financial resources were the strongest predictor of adoption of financial inclusion strategies. This can be attributed to the fact that SACCOs in the study had a healthy capital base, a large and growing, membership and access to loans. SACCOs had also invested in sectors with high returns such as securities and real estate. The financial resources gave SACCOs the power to adopt financial inclusion strategies.

Loan repayment is an important determinant of adoption of financial inclusion strategies in SACCOs. Out of the four variables in the study, loan repayment was the second strongest predictor of adoption of financial inclusion strategies. This could be attributed to the fact that loan repayment is a source of financial resources. The higher the loan repayment, the higher the income for the SACCO enhancing the financial resources of the SACCO which enable better adoption of financial inclusion strategies.

The contribution of the study to knowledge is that financial resources and loan repayment are important to financial inclusion in the context of SACCOs. Financial resources and loan repayment are the determinants of financial inclusion strategies adoption in SACCOs in that order.

6 Recommendations

SACCOs should diversify their investment to other sources of income to avoid over reliance on real estate and securities. More SACCOs should embrace utilization of credit reference bureau to ensure that loans are only given to those who are creditworthy a practice which should enhance loan repayment.

The current study was conducted in Kirinyaga County which is largely rural and agricultural based. Future studies should be carried out in other areas such as towns and cities to assess how the same factors operate in a different environment. Customers should be incorporated as respondents in future studies to enhance understanding of financial inclusion. Other cooperatives such as housing cooperatives should be considered in future studies.

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