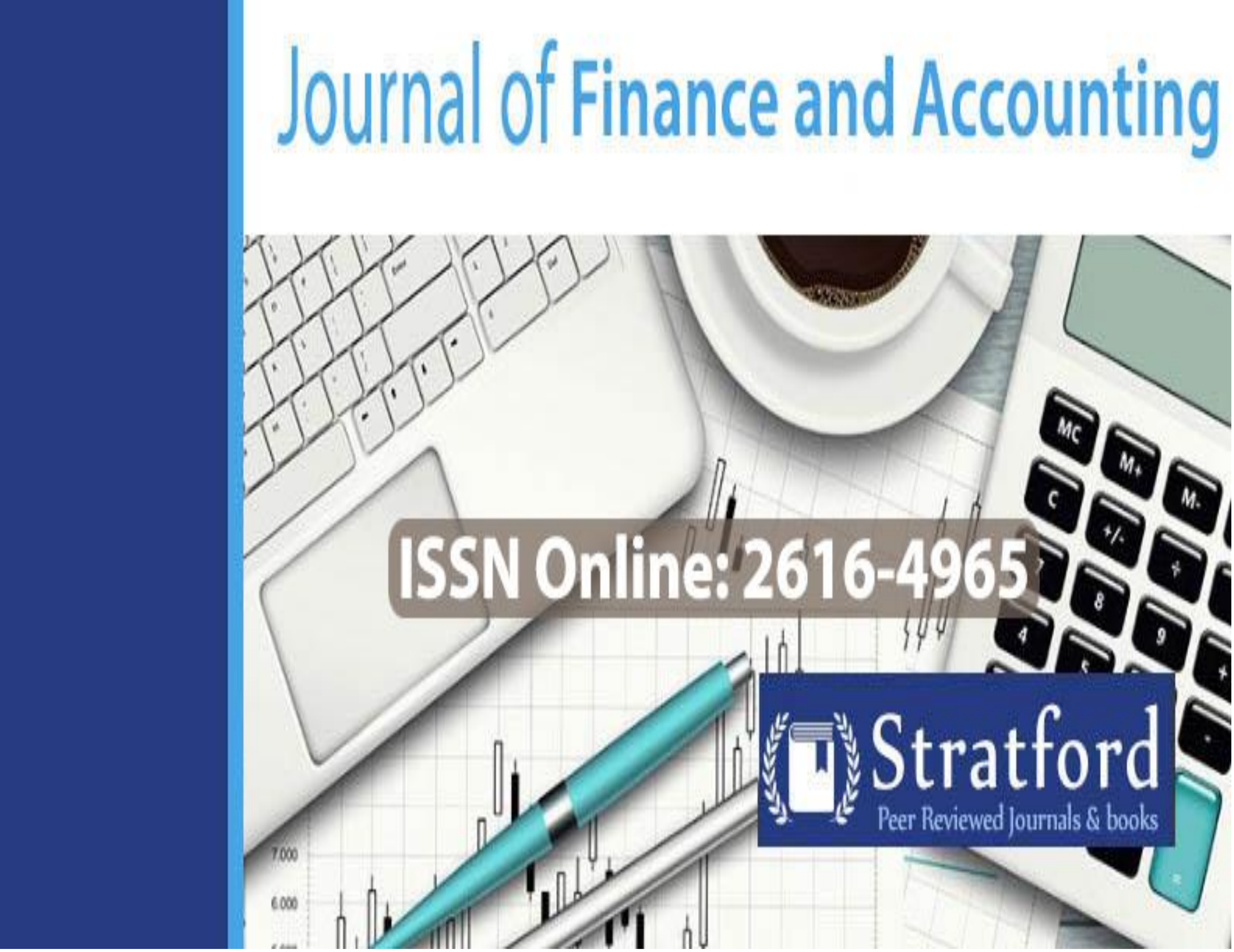


# Role of Financial Literacy, Financial Innovation, Financial Inclusion on SME Access to Credit in Kenya: A Case of Kumisa SACCO

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# Role of Financial Literacy, Financial Innovation, Financial Inclusion on SME Access to Credit in Kenya: A Case of Kumisa SACCO

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## Abstract

There has been important obligation of monetary appreciation regarding the role of financial literacy, innovation and financial inclusion in refining financial access levels globally. Deficiency of financial access nevertheless is a key hindrance to the growth of these firms. Therefore, this research project aimed at looking at the factors that affects access of credit by SME'S in Kenya. The study were guided by the following objectives: determine the effect of financial literacy on the credit access by SME's in Kenya to, establish the effect of financial inclusion on the credit access by SME's in Kenya, establish the effect of financial innovation on the credit access by SME's in Kenya and to determine the joint effect of financial literacy, financial innovation and financial inclusion on the credit access by SME's in Kenya. Descriptive research design was used in the study. The population of interest in this study was members of 3000 members Kumisa Sacco in Kiambu Town of Kiambu County. The sample size for the study was 340 respondents. The method of data collection instruments involved the use of primary data and secondary data. Primary data was gathered by use of questionnaires. Secondary data was obtained from desk reviews. The study employed descriptive and inferential analysis. Regression analysis was used to establish the relative significance of each of the variables on the effect of financial literacy, financial innovation and financial inclusion on the SME access to credit in Kenya. From the analysis it was established that financial literacy, financial innovation and financial inclusion accounted for 79% of the changes in SMEs access to credit. The study recommended that there should be efforts in promoting financial literacy, financial innovation and financial inclusion in Kiambu County. This study covered only basic financial literacy, financial innovation and financial inclusion in order to come up with the results. There is need to study a single variable e.g. the effect of Financial Inclusion on SMEs access to credit in Kenya.

**Keywords:** *Financial Literacy, Financial Inclusion, Financial Innovation, Credit Access, SME's, Kenya*

## 1.1 Introduction

Financial access is a precondition for financial performance of small and micro enterprises and has become an increasingly important development metric, as one of the factors which can drive widespread economic development (Fernandes, John & Richard, 2014). Small and micro enterprises have been noted to play a significant role in employment and economic growth of many countries (Liedholm & Mead, 2013). Indeed, in many developing countries as well as developed countries, small and micro enterprises are the focal point of growth and self-employment. In low-income countries, it is estimated that small and micro enterprises account for more than 60 per cent of the GDP and provide over 70 per cent of employment opportunities (Lukacs, 2005). Financial access is affected by the following factors; financial literacy, financial innovation and financial inclusion.

Financial literacy refers to the set of skills and knowledge that allows an individual to make informed and effective decisions with all of their financial resources. Making the right financial choices is very important decision in the life of individuals with long-term financial consequences. Management of financial of a firm is not an easy task; SMEs need to make a choice out of a large menu of financial needs of which many have complicated features. The SME Act (2011) was enacted to guide the provision of credit, capacity development for micro, small and medium enterprises in the country going forward to attaining vision 2030 (Republic of Kenya, 2012).

Financial literacy provides knowledge and understanding of financial concepts and the skills, motivation and confidence to apply such knowledge and understanding in order to make effective decisions across a range of financial contexts and to improve the financial well-being of SMEs (Hogarth, 2002). Mutegi *et al*. (2015) affirms that financial literacy facilitates the decision making processes such as payment of bills on time, proper debt management which improves the credit worthiness of potential borrowers to support livelihoods, economic growth, sound financial systems, and poverty reduction. It also provides greater control of one's financial future, more effective use of financial products and services, and reduced vulnerability to overzealous retailers or fraudulent schemes.

Financial innovations provide easy access to accurate activities like disbursements, repayments, deposits, withdrawals, and money transfer. As such, there are minimal opportunities for errors. Innovations are associated with risk. In this regard, therefore, microfinance institutions carry out risk analysis before implementing innovations (Fernandes, John & Richard, 2014). According to Frame and White (2004) 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. Yet it is innovative small firms which often find it the hardest to obtain finance (Schneider & Veugelers, 2010). Innovative firms tend to have riskier business models, which are important to create new markets but are also difficult for banks to value. They are often more reliant on intangible assets, rather than physical property, but intangibles are difficult to value as they are context specific, and thus hard to use as collateral for lending. The evidence on this point is not conclusive, but some authors suggest that the most important firms for the economy often find it hardest to obtain finance (Freel, 2007).

According to Sarma (2008), financial inclusion is a process which ensures easy access to financial services in an economy. Financial inclusion can both improve the efficiency of intermediation between savings and investments and facilitate change in the financial system configuration. In view of Aduda and Kalunda (2012), financial inclusion is the process of ensuring access to financial products and services needed by all sections of the society in general, but particularly, the vulnerable, weaker sections and low income groups, fairly, transparently at an affordable cost in mainstream institutional players. Understood in this sense, financial inclusion has continued to assume increasing interest among policy makers, researchers and development oriented agencies, across the globe. Accordingly, countries are devising various regulatory strategies and frameworks to ensure that all populations excluded from financial services are reached and served.

The access to financial services mobilizes greater household savings (enabling such persons to invest in themselves and families), leverages capital for investments and expands the class of entrepreneurs (CBN, 2012). Financial inclusion is viewed as the ability of some individual to access and use basic financial services like savings, loans and insurance designed in a manner that is reasonably convenient, reliable and flexible. According to Nwanko and Nwanko (2014), the traditional idea of financial inclusion is the provision of access to and usage of diverse, convenient, affordable financial services. Access to and use of financial services is one of the major drivers of economic growth (Sharma, 2016). Financial Inclusion covers sustainable, relevant, cost effective and meaningful financial services for the financially underserved population especially rural dwellers. World Bank (2012) described financial inclusion as the range, quality and availability of financial services to the underserved and financially excluded. According to FATF (2011), financial inclusion is about providing access to an adequate range of safe, convenient and affordable financial services to disadvantaged and other vulnerable groups, including low income, rural and undocumented persons, who have been underserved or excluded from the formal financial sector.

### 1.2 Statement of the problem.

The significance of the contributions that SMEs have on the development of a nation is enormous. SMEs have assisted in regional and local development as they help accelerate industrialization in rural areas by linking them with other sectors in the urban areas (Hansah et al, 2013). In line with this argument, financial access and transaction costs have been identified as intervening and moderating factors in the relationship between entrepreneur financial literacy and performance of microenterprises (Hieltjes *et al*, 2013). However, empirical studies on the nature of the relationship between entrepreneur financial literacy, financial access; transaction costs and performance of microenterprises have produced contradictory and inconclusive evidence. Numerous studies have been carried globally and locally on the influence of financial literacy and financial innovation on credit access. For instance, Mengich *et al.* (2013) studied the challenges to the uptake of equity financing by SMEs in Kenya and established that information asymmetries, lack of financial literacy and transaction costs constrained the uptake of equity financing by SMEs in Kenya. Wachira *et al.* (2012) examined the impact of financial literacy on access to financial services by SMEs in Kenya and established that financial literacy was low and this impeded access to financial services. Barte (2011) studied the effect of financial literacy on microenterprises in the fishing subsector in the Philippines and established that the fish vendors had low levels of financial literacy which negatively affected their enterprises. However, Eresia-Eke I (2014) studied the relationship between the financial literacy of entrepreneurs and business growth in South Africa and established that there was no correlation between financial literacy and the growth of Small, Micro and Medium Enterprises (SMMEs).

The relationship between entrepreneur financial literacy, financial access and transaction and the performance of microenterprises has been examined in several empirical studies. Despite numerous studies on financial literacy, financial innovation and financial inclusion on access, none of the studies examined the joint effects of financial literacy, financial innovation and financial inclusion on the SME access to credit in Kenya. Therefore, the selection of the study variables, the configuration of the relationships among the variables and the formulation of an integrative conceptual model, depicting the nature of these relationships, is unique to this study. The study will seek to answer the following research question; what is the effect of financial literacy, innovation, financial inclusion on the SME access to credit in Kenya?

### 1.3 Objectives of the study.

i. To determine the effect of financial literacy on the credit access by SME's in Kenya.
ii. To establish the effect of financial inclusion on the credit access by SME's in Kenya.
iii. To establish the effect of financial innovation on the credit access by SME's in Kenya.
iv. Determine the joint effect of financial literacy, financial innovation and financial inclusion on the credit access by SME's in Kenya

## 2.0 Literature Review

### 2.1 Theoretical Literature Review

#### 2.1.1 Financial literacy theory

Financial literacy theory is an emerging theory that draws theoretical perspectives from other theories including economics, psychology, sociology and management to explain the financial behavior of individuals. Financial literacy as a construct was first championed by the Jumpstart coalition for personal financial literacy in its inaugural study of financial literacy among high school students (Hastings *et al.*, 2013). As operationalized in academic literature, financial literacy is a multi-dimensional construct comprising of knowledge of financial products, knowledge of financial concepts, having the mathematical skills or numeracy necessary for effective financial decision making and financial behavior such as financial planning (Wise, 2013).

Early literature on financial literacy began by documenting important links between financial literacy and several economic behaviors such as money management, debt and saving behaviors, retirement planning, asset ownership and participation in financial markets (van Rooj et al, 2011). Economic psychologists posited that factors associated with retirement saving and asset ownership behaviors are both economic and psychological. Several behavior theories have also been used in the study of financial literacy and financial behaviors.

Hilgert *et al* (2003) formed a financial practices index based upon self-benefiting behavior in cash-flow management, credit management, saving and investment practices and established that there was a positive correlation between financial literacy scores and Financial Practices Index scores thus confirming that financial knowledge is related to financial practices. The theory of planned behavior, often used to understand and predict human behavior, has been applied to online shopping behavior, investment behavior and debt reducing behaviors (Xiao, 2008b).

### 2.1.2 Financial inclusion Theory

Financial inclusion refers to the process of ensuring access to appropriate financial products and services needed by all sections of the society in general and vulnerable groups such as weaker sections and low income groups in particular, at an affordable cost, in a fair and transparent manner, by mainstream institutional players (Chakrabarty, 2011). An inclusive financial sector that provides access to credit for all bankable people and firms, to insurance for all insurable people and firms, to savings and payment services for everyone (United Nations, 2006). Inclusive finance does not require that everyone who is eligible use each of the services, but they should be able to choose them if desired.

Kempson *et al.* (2004), supported by evidence from the Family Resources Survey 2002-2005, report that uptake of financial products and services is lowest amongst African-Caribbean, Black, Pakistani and Bangladeshi households in UK. However, for some members of these groups religious beliefs may provide a partial explanation for this apparent exclusion. Worldbank (2008) has classified financial access barriers into four main categories; physical barriers, lack of documentation barriers, affordability barriers and lack of appropriate products and services. For geographic access, branches have been the traditional bank outlet, hence geographic distance to the nearest branch, or the destiny of branches relative to the population can provide a first crude indication of geographic access or lack of physical barriers to access Beck, dermirguc-Kunt and Martinez (2007).

### 2.1.3 Liquidity Preference Theory

Liquidity preference theory as propounded by Keynes indicated that interest is purely a monetary phenomenon, because interest is calculated in terms of money. Interest in this case is the price paid for giving a way funds for a specific period of time. According to this theory lenders are risk averse and risk generally increases with length of time. Therefore, Lenders prefer to make short-term loans rather than wait for a long time, preferably to uncertainty. The lenders can only be induced to lend for longer periods of time by granting them higher interest rates (Joy, 1977;

Pandey, 2003). The theory is closely related to loanable funds theory except that according to this theory, equilibrium interest rate is determined in terms of the supply of and demand for money (Mishkin, 2009). Cash being the most liquid asset, people would like to keep their assets in cash. Therefore, when asked to surrender this liquidity, they must be paid a reward in the form of interest. An asset is considered liquid if the market in which it is traded has money buyers and many sellers. The greater the desire for the liquidity, the higher shall be the rate of interest for departing with the liquidity.

### 2.1.4 Loanable Funds Theory

Borrowing from banks and other financial institutions is one of those ways through which firms and individuals can acquire external funding to finance their operations (Adekanye & Adedoyin, 1992). The individuals and institutions which have funds channel to those who need the funds. To persuade those supplying the funds in the market to provide the required funds to those who require the funds, there are cost charged on the funds disbursed. According to the loanable funds theory, the quantity of money supplied depends on the demand for money in the market (Mishkin, 2009).

The supplied quantity of money will depend on the interest charged which is the price of financial service acquired when all other economic factors are held constant. Similarly, the quantity of money demanded in the market is a function of price and interest when other factors are held constant (Mishkin, 2009). When the price is low, interest will be high and the quantity supplied low. This would mean that less loanable funds will be available. But when the price increases, the interest falls and the supply increases. The market equilibrium is then obtained at the point where the amount people are willing to demand equals the amount that loan providers are willing to supply at a given price.

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### 2.2 Conceptual Framework

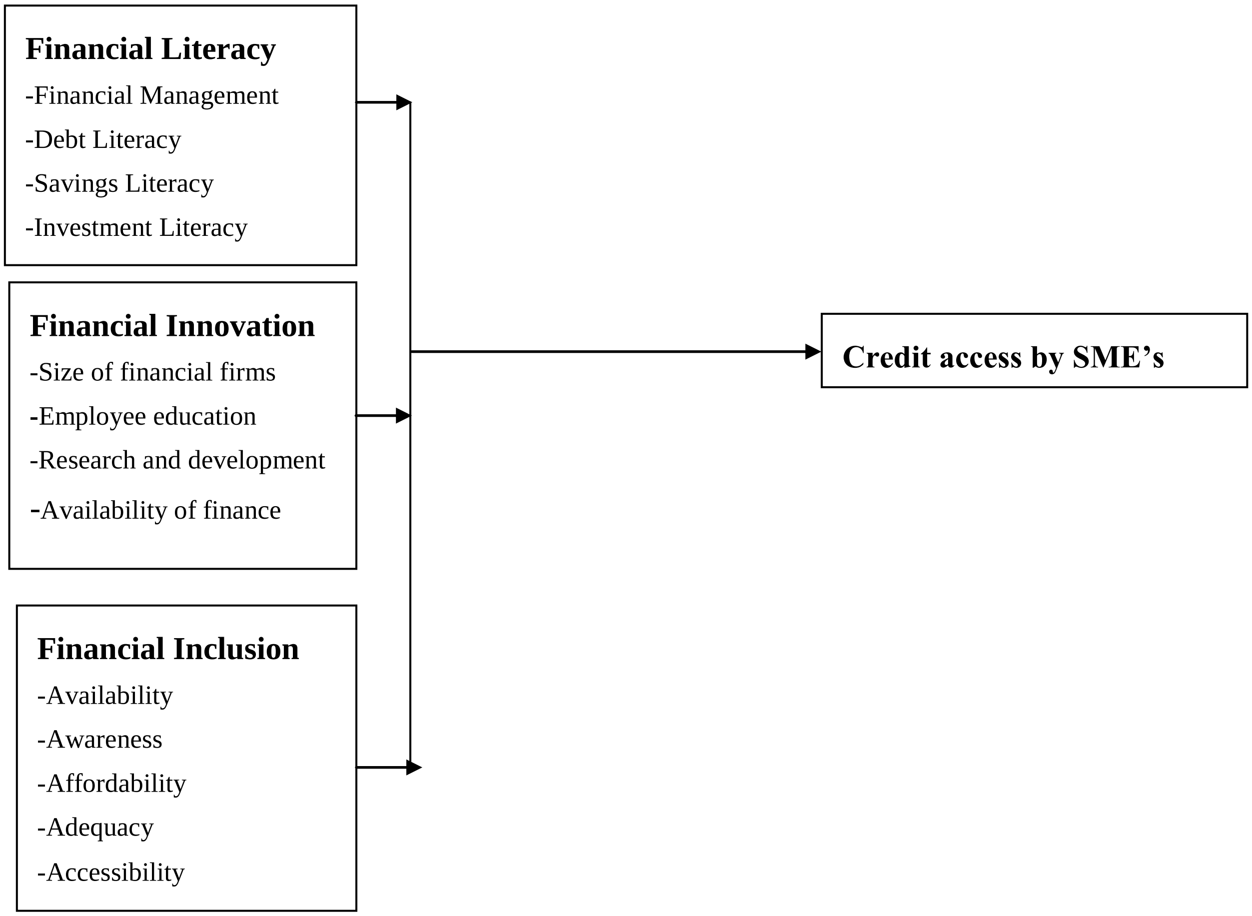


**Figure1: Conceptual framework**

### 3.0 Research Design and Methodology

Descriptive research design was used in the study. The population of interest in this study was the members of 385 members Kumisa Sacco in Kiambu Town of Kiambu County. The sample size for the study was 320 respondents. The method of data collection instruments involved the use of primary data and secondary data. Primary data was gathered by use of questionnaires. The study employed descriptive analysis. The relationship between the dependent variable and the independent variables was determined by regression model. A multiple regression model was used to assess the effect of financial literacy, financial innovation and financial inclusion on the SME access to credit in Kenya.

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**Regression model**

$Y= \beta_0 + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \mu i$

Where;

Y= is Credit access

$\beta_0, \beta_1, \beta_2, \beta_3$ = regression coefficients

$X_1$ = Financial literacy,

$X_2$ = Financial inclusion

$X_3$ = Financial innovation

$\mu i$ - Constant errors

## 4.0 Data Analysis Interpretations and Presentations

### 4.1 Response Rate

The study targeted a sample size of 320 members of Kumisa Sacco in Kiambu Town, Kiambu County from which 294 filled in and returned the questionnaires making a response rate of 92%. This response rate was satisfactory to make conclusions for the study. According to Mugenda & Mugenda (2008), a response rate of 50 percent is adequate for analysis and reporting; a rate of 60 percent is good and a response rate of 70 percent and over is excellent. Based on the assertion, the response rate was considered to be excellent.

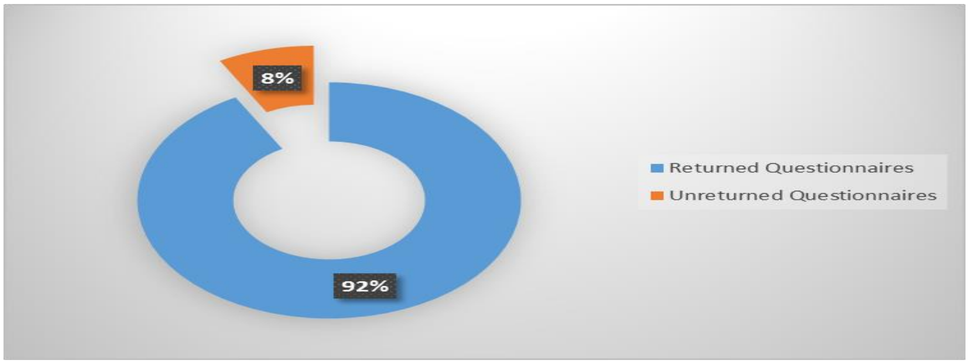


**Figure 2: Response rate**

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### 4.2 Descriptive Statistic

The study sought to establish the role financial literacy, financial innovation and financial inclusion on SMEs access to credit in Kenya. The respondents were asked to rate how they felt about different variables in a five point Likert scale. The range was from strongly agree (5)' to 'strongly disagree' (1. The score of 1 represented "No extent" 2 represented "Little extent", 3 represented "Moderate extent", 4 represented "Great extent" and five represented "Very great extent"

### 4.2.1: Financial Literacy and SMEs Access to Credit

The study sought to determine whether Financial Literacy had any influence on SMEs access to credit. The table 1 shows the findings of from the respondents.

**Table 1: Financial Literacy and SMEs access to credit**

| | N | Mean | Std. Deviation |
|---|---|---|---|
| I make payment of my bills on time | 294 | 4.1531 | .61303 |
| Through Financial education I can evaluate financial products | 294 | 4.2653 | .67956 |
| I manage my debts properly | 294 | 3.7959 | .40372 |
| I can make informed decisions on my finances | 294 | 3.6327 | .48290 |
| My household budget making is effective | 294 | 3.7755 | .59916 |
| I have created a saving plan | 294 | 4.0204 | .65545 |
| I make strategic investment decisions using financial knowledge | 294 | 4.2041 | .58931 |
| I meet my financial obligations through wise planning | 294 | 4.2857 | .62376 |
| I can control my financial future | 294 | 2.3878 | .50861 |
| I am not vulnerable to overzealous vendors or fraudulent ploys | 294 | 4.3776 | .52608 |
| I diversify assets in preparation for tough economic times | 294 | 4.2143 | .67500 |
| I have adequate knowledge of price changes on cost of living | 294 | 3.7755 | .41796 |
| I am able to compare bank accounts | 294 | 3.6531 | .49782 |
| I can make optimal decisions on credit and loan options | 294 | 3.7959 | .60644 |
| I am able to compare and contrast the different payment instruments | 294 | 4.0612 | .63702 |
| I check the insurance coverage before making decisions | 294 | 4.2347 | .56883 |
| I can easily access the financial institutions | 294 | 4.3265 | .58611 |
| Several financial institutions are within my walking distance | 294 | 4.4286 | .49572 |
| I have several options for borrowing money whenever I need | 294 | 4.4184 | .49413 |
| Using my strong asset base I can access more finances | 294 | 4.2959 | .55808 |
| Insufficient initial capital is a constraints I face in accessing credit | 294 | 4.4082 | .56947 |
| My income level determines the amount of credit I can access | 294 | 4.4490 | .49824 |
| Valid N (listwise) | 294 | | |

From the findings in the SPSS analysis it was noted that financial literacy plays a significant role in SMEs access to credit. This was noted true based on the respondents' response to statements relating to Financial literacy and SMEs credit access. For instance, majority of the respondents agreed to a great extent that they paid their bills on time. This was supported by the mean value calculated of 4.153. A significant number of the respondents also agreed to the statement; Through Financial education they can evaluate financial products, this was inferred from the mean value calculated in the analysis of 4.265**.** The standard deviation of 0.680 calculated in the SPSS indicated little variation in the responses of the respondents. The study also established most respondents agreed to a great extent that they make strategic investment decisions using financial knowledge. This was noted from the mean calculated of 4.204, which indicated that most respondents agreed to the statement and the standard deviation calculated of less than 1.5 indicates that there was little variance from the mean value. A significant number of the respondents disagreed to the statement; I can control my financial future, this was inferred from the mean value calculated in the analysis of 2.388**.** The standard deviation of 0.526 calculated in the SPSS indicated little variation in the responses of the respondents. Generally, it was noted that financial literacy had a significant influence SMEs access to credit in Kenya.

### 4.2.2: Financial Innovation

The study sought to establish how the respondents rated the level of financial innovation being undertaken by KUMISA Sacco. The results from the analysis of findings are illustrated in the figure below as shown.

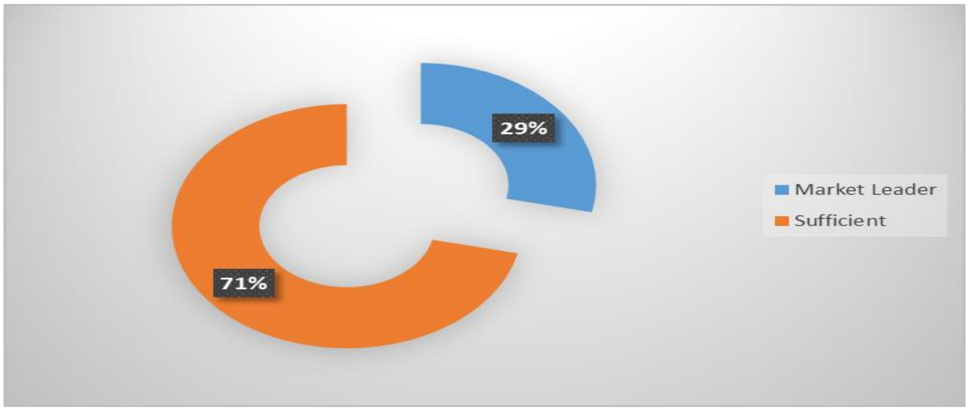


**Figure 3: Financial Innovation**

From the analysis of findings majority of the repondents (71%) conceded that financial innovation at KUMISA was sufficient. Only a mere 29% of the respondents indicated that KUMISA Sacco's financial innovation was insufficient.

#### 4.2.2.1: Factors influencing Financial Innovation

The study sought to establish the factors that influence financial innovation in an organization on four point likert scale. The results from the analysis of findings are illustrated in the table 2.

**Table 2: Factors Influencing Financial Innovation**

| | N | Mean | Std. Deviation |
|---|---|---|---|
| Heavy competition in the financial sector | 294 | 1.6122 | .48807 |
| To increase revenue | 294 | 1.6531 | .47681 |
| Technology advancement | 294 | 1.7041 | .45723 |
| Customers changing demands | 294 | 1.6327 | .48290 |
| Size of the Bank | 294 | 1.6122 | .48807 |
| Macroeconomics conditions (Economic growth | 294 | 1.7041 | .45723 |
| Legislation and Financial supervision | 294 | 1.7653 | .42453 |
| Increase in financial risks | 294 | 1.8469 | .36066 |
| To increase the number of customers | 294 | 1.6633 | .47340 |
| To enhance customer satisfaction | 294 | 1.6122 | .48807 |
| Valid N (listwise) | 294 | | |

From the findings in the SPSS analysis it was noted that heavy competition in the financial sector greatly influenced financial innovation. This was noted true by the mean established of 1.612. The standard deviation calculated of .4881 indicated little deviation in the responses from the respondents. A significant majority of the respondents conceded that technological advancement also had a significant influence on financial innovation. This was supported by the mean value calculated of 1.704. The standard deviation calculated of .457 indicated uniformity in the responses from the respondents. It was also noted from the findings that Customer changing demands, Size of the bank, Macro economic conditions, legislation and financial supervision all had a significant influence on financial innovation. This was established by the mean calculated of 1.6327, 1.6122, 1.7041, 1.7653 and 1.8469 respectively. The standard deviation calculated of less than 1.5 indicated uniformity in the responses from the respondents.

#### 4.2.2.2: Benefits derived from Financial Innovation

The study sought to establish from the respondents the benefits derived from financial innovation. The results from the analysis of findings are illustrated in the table below as shown.

**Table 3: Benefits derived from Financial Innovation**

| | N | Mean | Std. Deviation |
|---|---|---|---|
| Improved customer Services | 294 | 1.7041 | .45723 |
| Reduction in no of customers in the banking halls | 294 | 1.6429 | .47997 |
| Reduction in operational costs | 294 | 1.6837 | .46583 |
| Expansion of the Sacco's Geographical coverage | 294 | 1.7449 | .43666 |
| Increase in the Market share | 294 | 1.7041 | .45723 |
| Increase in Sacco's revenue | 294 | 1.6327 | .48290 |
| Valid N (listwise) | 294 | | |

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From the findings in the SPSS analysis it was noted that financial innovation led to increase in market share. This was noted true by the mean established of 1.7041. The standard deviation calculated of .4572 indicated little deviation in the responses from the respondents. A significant majority of the respondents conceded financial innovation led to improved customer service. This was supported by the mean value calculated of 1.704. The standard deviation calculated of .457 indicated uniformity in the responses from the respondents. It was also noted from the findings that financial innovation also led to reduction in the number of customers in the banking hall, reduction in operational costs, expansion of Sacco's geographical coverage and increase in market share all had a significant influence on financial innovation. This was established by the mean calculated of 1.643, 1.684, 1.745 and 1.633 respectively. The standard deviation calculated of less than 1.5 indicated uniformity in the responses from the respondents.

### 4.2.3: Credit Access

The study also sought to establish the extent to which respondents agreed with certain statements relating to SMEs access to credit in Kenya. The results from the analysis of findings are illustrated in the table below as shown.

**Table 4: Credit Access**

| | N | Mean | Std. Deviation |
|---|---|---|---|
| I can access loans to fund my business prospects | 294 | 4.3776 | .52608 |
| I can access credits from financial institutions | 294 | 4.1837 | .57858 |
| Lack of collateral limits my access to credit services | 294 | 4.2551 | .61235 |
| Accessing credit has improved my economic status | 294 | 4.2551 | .67593 |
| My credit profile is done before I am awarded credit | 294 | 3.8061 | .39601 |
| The credit terms are good when I seek credit services | 294 | 3.6633 | .47340 |
| Valid N (listwise) | 294 | | |

From the findings in the SPSS analysis it was noted that majority of the respondents agreed to a great extent that they can access loans to fund their business projects. This was noted true by the mean calculated of 4.3776. The standard deviation calculated of .5261 indicated uniformity in the responses from the respondents. Majority of the respondents also agreed to a great extent that lack of collateral limits their access to credit services. This was supported by the mean value calculated of 4.255. A significant number of the respondents also agreed to the statement; accessing credit has improved their economic status, this was inferred from the mean value calculated in the analysis of 4.255**.** The standard deviation of 0.675 calculated in the SPSS indicated little variation in the responses of the respondents. The study also established most respondents agreed to a great extent that their credit profile is done before I am awarded credit. This was noted from the mean calculated of 3.806, which indicated that most respondents agreed to the statement and the standard deviation calculated of less than 1.5 indicates that there was little variance from the mean value. Generally, it was noted that SMEs access to credit in Kenya had an influence in their general business processes.

### 4.3 Correlation Analysis

The study used correlation analysis to establish the association between financial inclusion, Financial Innovation, Financial Inclusion and SMEs access to credit. Two-tailed Pearson correlation (R) was used to establish the same at 95% confidence level. From the results, the R-value between financial literacy and SMEs access to credit was 0.871. This signifies strong and positive linear association between financial literacy and SMEs access to credit. Financial Innovation had a correlation value of 0.843 with the SMEs access to credit. This depicts a strong and linear relationship between predictor and dependent variable. Also noted was that financial inclusion had a correlation value of .781 which also indicated a significant, positive and linear relationship between financial inclusion and SMEs access to credit.

**Table 5: Correlation Matrix**

| | | Financial Literacy | Financial Innovation | Financial Inclusion | SMEs access to credit |
|---|---|---|---|---|---|
| **Financial Literacy** | Pearson Correlation | 1 | | | |
| | Sig. (2-tailed) | . | | | |
| **Financial Innovation** | Pearson Correlation | 0.632 | 1 | | |
| | Sig. (2-tailed) | 0.002 | . | | |
| **Financial Inclusion** | Pearson Correlation | 0.899 | 0.558 | 1 | |
| | Sig. (2-tailed) | 0.019 | 0.032 | . | |
| **SMEs access to credit** | Pearson Correlation | 0.092 | 0.673 | 0.147 | 1 |
| | Sig. (2-tailed) | 0.871 | 0.843 | 0.781 | . |

### 4.4 Regression Analysis

The study conducted multiple regression analysis of:

$$Y = \beta_0 + \beta_1\chi_1 + \beta_2\chi_2 + \beta_3\chi_3 + \varepsilon$$

$\beta_0$ is the regression model constant; $\beta_1$ - $\beta_3$ are the regression coefficients. Y is the SMEs access to credit, $\chi_1$ is the Financial literacy, $\chi_2$ is financial innovation; $\chi_3$ is the financial inclusion, and $\varepsilon$ is the error term obtained from the F-significance from ANOVA.

**Table 6: Model Goodness of Fit**

| R | R Square | Adjusted R Square | Std. Error of the Estimate | Durbin-Watson |
|---|---|---|---|---|
| 0.889 | 0.790 | 0.767 | 0.00455456 | 2.189 |

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Table 6 above presents the regression model goodness of fit to establish if regression analysis is suited for the data. Pearson Correlation value of 0.889 was established depicting that the independent variables (financial literacy, financial innovation and financial inclusion) had a very good linear relationship with the dependent variable (SMEs access to credit). An R-square value of 0.790 was established depicting that this relationship was very strong and financial literacy, financial innovation and financial inclusion account for 79% of SMEs access to credit. A Durbin Watson test for autocorrelation value of 2.189 was established depicting no (serial) autocorrelation within the regression model residuals. Thus, the random (non-stationary) data was used in the regression analysis.

**Table 7: Analysis of Variance (ANOVA)**

| | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|
| Regression | 2.368 | 3 | 7.104 | 2.722 | .000 |
| Residual | 0.009 | 290 | 2.610 | | |
| Total | 263.111 | 293 | | | |

ANOVA analysis was conducted to determine the significance of the regression model. An F-significance value of 0.000 was established depicting that the regression model had high significance (confidence level) ($p<0.05$).

**Table 8: Regression Coefficient**

| | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. |
|---|---|---|---|---|---|
| | **B** | **Std. Error** | **Beta** | | |
| (Constant) | 4.946 | 1.355 | | 1.500 | 0.574 |
| Financial Literacy | 0.456 | 0.209 | 1.634 | 8.901 | 0.002 |
| Financial Innovation | 0.842 | 0.062 | 0.927 | 33.335 | 0.000 |
| Financial Inclusion | 0.873 | 0.149 | 1.388 | 3.566 | 0.005 |

a. Dependent Variable: SMEs access to credit

The study established the following regression model:

SMEs access to credit = 4.946 + 0.456 * Financial literacy + 0.842* Financial Innovation + 0.873*Financial Inclusion

The study established that when financial literacy, financial innovation and financial inclusion are zero, SMEs access to credit would be 4.946. The study also established that holding other factors constant, a unit increase in financial literacy would lead to a 0.456 unit increase in SMEs access to credit; a unit increase in financial innovation would yield a 0.842 unit increase in SMEs access to credit; a unit increase in Financial Innovation would result in a 0. 873 increase in SMEs access to financial Innovation. From the coefficients, it was established that each of the independent variables; financial literacy, financial innovation and financial inclusion was significant in explaining the improvements in SMEs access to credit in Kenya.

## 5.0 Conclusion

From the findings, the study concluded that financial literacy, financial innovation and financial inclusion have a significant effect on SMEs access to credit. It was evident that sound financial management is critical to the survival and management of SMEs because financial literacy skills empower and educate investors so that they are able to evaluate financial products and make informed decisions, facilitates proper debt management which improves the credit worthiness of potential borrowers.

It was also concluded that a highly turbulent environment leads to successful innovation creating a unique competitive position and competitive advantage and lead to a superior performance. The study established that this can only be maintained by ceaseless innovation and improvement of the product and the process. The study concluded that financial innovation has not only opened up new opportunities for the sector participants, but also increased new market players arising with a range of new and innovative products in the financial market. Innovation consists of firms developing new products or new production processes to better perform their operations.

It was evident from the analysis that financial access enhances financial inclusion thereby contributing to financial sector deepening and overall economic growth. Financial inclusion aims at drawing the unbanked population into the formal financial system to enable them access a wide range of financial services including savings, payments, money transfers and credit and insurance. The study noted that financial inclusion of small firms reduces liquidity constraints, encourages investment which in turn influences industrial structure, firm size, and competition in an economy.

## 6.0 Recommendation

Based on the findings the following are recommended;

The financial services sector should be focused on developing products that are responsive to the real needs of the SMEs. There is need for policy formulations, administration and implementation by the government and its partner agencies to promote this vital sector. There should be continuous trainings of this sector on financial literacy, business planning, finance basics, handling cash flows and the importance of ethics in Business. There should be discussions not only on finance but also on capacity building. Development agencies should also offer support where they can.

There should be efforts in promoting financial literacy, financial innovation and financial inclusion in Kiambu County. This can be done through trade fairs and other government sponsored programs. Capacity building programs facilitating technology development, acquisition and transfer. There should be programs to promote general education levels and in particular financial literacy education. Acquisition tools and programs for collection of comprehensive data disaggregated by region, legal structures and age among others in partnership with the key stakeholders. This will facilitate proper planning for the SMEs access to credit.

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