

COLLATERAL REQUIREMENT AS A DETERMINANT OF PORTFOLIO QUALITY OF MICROFINANCE INSTITUTIONS: WHY DOES IT MATTER? INSIGHTS FROM MICROFINANCE BANKS IN KENYA

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©2021

International Academic Journal of Economics and Finance (IAJEF) | ISSN 2518-2366

Received: 2nd April 2021

Published: 8th April 2021

Full Length Research

Available Online at: http://iajournals.org/articles/iajef_v3_i6_362_374.pdf

Citation: Muindi, C. W., Mutwiri, N. M. (2021). Collateral requirement as a determinant of portfolio quality of microfinance institutions: Why does it matter? Insights from microfinance banks in Kenya. *International Academic Journal of Economics and Finance*, 3(6), 362-374

ABSTRACT

The unending demand for finances by low income earners and small businesses in the modern business environment coupled with stringent measures by commercial banks, has led to the emergence of microcredit offered by Microfinance Institutions (MFIs). They provide credit to borrowers aimed at promoting entrepreneurship and to alleviate poverty which is often hampered by lack of finances. However, their clientele often lack collateral, have low income levels, high leverage level, poor liquidity, and have little or no verifiable credit history. As a result, these institutions are often antagonised by high default rate. Empirical literature showed that MFIs in Kenya have experienced poor portfolio quality as indicated by the increasing Portfolio at Risk (PaR) over 30 days standing at 7% in 2012 progressively increasing to 16% in 2016 and 17.2% in 2018. This rate was much higher than the global average of 4.6% in 2012 to 4.7%, in 2015, 7.2% in 2016, and 7% in 2018. Since PaR over 30 days, is greater than the safe ceiling of 10%, it is clear that there is a concern for portfolio quality among MFIs in Kenya. The aim of the study was to determine the effect collateral requirements on portfolio quality of microfinance institutions in Kenya. The study was anchored on agency theory and modern portfolio theory. Survey research design was deployed on a population of 13 Microfinance banks in Kenya. Secondary data relating to a five

year period ranging from year 2014 to 2018 was utilised. The data was collected through a secondary data collection sheet. Data analysis was conducted using descriptive statistics and inferential analysis with the aid of Statistical Packages for Social Sciences (SPSS). The study used R² to explain variation in portfolio quality accessioned by variations in microcredit requirements. The F-statistic at 95% confidence level would determine significance in the relationship of the study variables. The decision on the significance of the study variables was based on P-values at 0.05 significance level. The study established that portfolio quality was inversely correlated with collateral requirements. Consequently, it was concluded that increasing operational assets, significantly lead to a decrease in portfolio quality of microfinance institutions in Kenya. The recommendation of the study was the management of microfinance institutions in Kenya should carefully determine and emphasise on operational assets, since they significantly affect portfolio quality of microfinance institutions in Kenya. Finally, the study suggests that other studies should be conducted to establish other determinants of portfolio quality among deposit taking and other non-deposit taking MFIs such as average profits, leverage level, and liquidity level.

Key Words: Collateral Requirements; Microfinance Institutions; Operational Assets; Portfolio Quality

INTRODUCTION

In the wake of unending demand for finances in the market coupled with stringent measures set by commercial banks to caution themselves against default risk, microcredit has emerged as promising tool for financial inclusion (Servet, 2016). Over the years commercial banks have by and large considered micro borrowers and low income earners as undeserving and un-bankable. It's on this premise that the microfinance institutions have identified a glaring gap and exploited it. These institutions have in the last two decades dedicated their efforts to designing and implementing strategies aimed at attracting and addressing the peculiar needs of low income earners. As a result, the focus by low income earners has since shifted to credit only and microfinance banks (Revindo & Gan, 2017).

The main hindrance to economic growth small and medium enterprises and low income individuals in developing economies is lack of adequate capital among investors which is worsened by limited access to debt capital. World Bank (2014) echoed these sentiments that limited access to credit in developing countries inhibits economic growth and development. In 2019, MFIs lent approximately 124.1 billion dollars to 139.9 million borrowers a 70% increase from 98 million borrowers in 2009. To eliminate this challenge microfinance institutions provide small loans to their customers despite them low income, poor credit history and no steady revenue streams. Such loans are very crucial in improving the lives of the poor and the economy as they help in starting of small businesses and improving the living standards of the business owners (Islam, 2016). Further, provision of microcredit plays a major role in economic growth by boosting the living standards of lower cadre citizens (Servet, 2016).

However, provision of microcredit to this clientele has become a headache for the microfinance institutions. For instance, Sunday et al (2018) concluded that most individuals and small businesses searching for these services have little assets to pledge as collateral, often have low income streams, have low liquidity levels, and are highly levered. Additionally, they exhibit little or no verifiable credit history. This makes it difficult for microcredit institutions to objectively evaluate their credit viability leading to high levels of default (llagher et al., 2014). Owing to these factors, microcredit institutions have to be extra careful when evaluating their clients to reduce the incidences of information asymmetry. Consequently, microfinance institutions have to put in place minimum requirements that must be met by borrowers before credit can be extend. Such requirements include collateral requirement, minimum liquidity level, leverage level, and average profits.

Collateral refers to some form of assets that is acceptable by the lender as a security for provision of credit in case of default. As a result, the lender may dispose-off such as assets and recover any outstanding loans and interests (Guérin, Labie & Servet, 2015). The type of the loan taken determines the type of collateral. Collateral can be in the form of real estate, assets, depending on the purpose of the loan. For instance, for mortgage loans, the home is the collateral and for car loans, the car becomes the collateral. The main types of collateral accepted by financial institutions in Kenya include bank savings deposits, cars and investment accounts (Mondal, 2015). In addition, future pay checks can be used as collateral

mostly for short term loans. In this study collateral was operationalized using operational assets.

Loan portfolio is the main asset that is also the predominant source of revenue and therefore making it the greatest source of risk to microfinance institutions. In recent years, the net loan portfolio of microfinance institutions has risen steadily. For instance, in 2019, MFIs lent approximately 124.1 billion dollars to 139.9 million borrowers a 70% increase from 98 million borrowers in 2009. There was a 3.1 percent increase from Ksh.42.8 billion in 2017 to Ksh.44.2 billion (Central Bank of Kenya (CBK), 2019). The rise in loans was said to be as a result of a rise in demand for loan and the use of technology that saw services such as online banking and online lending apps become popular. The increased demand for loans by the risky clientele calls for effective and efficient management of the loan portfolio for stability and soundness of the institutions.

In this study portfolio quality was measured through portfolio at risk which is the proportion of loans in arrears of 30 days and restructured loans to total loan portfolio. Any PaR exceeding 10% indicates a risky portfolio (Aduboffour, 2016). Among micro finance institutions globally, PaR over 30 days has rose from 6.4% in 2009 to 4.7%, in 2015 to 7.2% in 2016 and 7% in 2018. Africa which enjoy the highest growth rate in MFIs (56%) and number of borrowers standing at 6.3 million in 2018, has a low portfolio quality of 13.6% over the same period. In Kenya, portfolio at risk remains a perennial problem with PaR being 12.2% in 2006 and dropping to 7% in 2012 then steadily increasing to 16% in 2016 and 17.2% in 2018 (CBK, 2019).

The Kenyan microfinance sector is made up of 57 microfinance institutions with total portfolios in excess of \$300 million and whose assets base total approximately KSH 325 billion. These institutions provide lending services to 6.1 million customers (Association of Microfinance Institutions (AMFI), 2018). Some of these institutions are not only MFIs but also banks, Savings and Credit Cooperatives (SACCOs) and wholesale enterprises (Wijesiri & Meoli, 2015). The largest market share in this sector, according to CBK (2018) is Equity Bank controlling 73.50% of the market closely followed by Kenya Women Finance Trust (KWFT) accounting for 12.06% market share, Sidian Bank comes third (6.39%), then Faulu bank with (3.56%) and finally Kingdom bank (formerly Jamii Bora bank) at 0.86 percent.

These institutions face stiff competition from commercial banks and SACCOs coupled with their risky portfolio (Sunday et al., 2018). As a result, microfinance institutions often suffer high default rate leading to poor performance, and in some instances collapse of these institutions (Servet, 2016). Poor portfolio quality as indicated by the increasing PaR over 30 days standing at 7% in 2012 and progressively increasing to 16% in 2016 and 17.2% in 2018 (CBK, 2019). This rate is much higher than the global average of 4.6% in 2012 to 4.7%, in 2015, 7.2% in 2016, and 7% in 2018. Since PaR over 30 days, is greater than the safe ceiling of 10%, it is clear that there is a concern for portfolio quality among MFIs in Kenya. Empirical studies by Akoto (2011), Augsburg et al. (2015), Onuko, Muganda, and Musiega (2015), Nyora (2015), Terano, Mohamed and Jusri, (2015) and Mutiso (2018) indicate that there exists contextual, methodological, and conceptual gaps in the existing literature. This

study thus sought to investigate the effects of collateral requirements on portfolio quality of microfinance institutions in Kenya.

LITERATURE REVIEW

This section outlines the theoretical review of literature and the empirical literatures reviewed with the aim of establish the link between the study variables and identifying research gaps thereof. The agency theory pioneered by Ross (1973) states that a conflict arises where there is divergence of interest arises between principals and their agents (Bosse & Phillips, 2016). Specifically, managers may sabotage the interests of shareholders by failing to optimally appraise borrowers and award their family, friends, and their acquaintances undeserving loans motivated by kickbacks received. On the other hand when borrowers are expected to utilize loan proceeds in profitable ventures and make periodic and prompt repayment of their loans (Mungai, 2017). Thus, where the borrower invests the borrowed money in very risky projects or fails to pay the required instalments (Pepper & Gore, 2015). In the wake of threat of default, microfinance institutions invest in agency costs such as cost of internal control system and debt collection costs to compel their borrowers to pay. Such costs affect organisational performance (Bosse & Phillips, 2016). Additionally, microfinance institutions demand some form of security on the loans. As a result, this study opines that failure by borrowers to pay up their loans adversely affect their portfolio quality and ultimately their performance. The theory was therefore appropriate to anchor collateral requirement and quality of portfolio.

On the other hand, the Modern Portfolio Theory (MPT) accredited to Harry Markowitz in a paper published in 1952 explains that investors can come up with portfolios that can ensure that they get the maximum returns from their investments. These portfolios must take into consideration the risks of the investments such that as investment risk increases, required rate of return also increases (Francis & Kim, 2013). According to theory, investors should focus on maximising the returns of a given investment portfolio for a given amount or risk or minimising the risk of a given portfolio while having the expected return from the investments. Using the tenets of the theory, microfinance institutions are able to minimize default risk by optimally evaluating the risk associated with each of their clients. By use of various strategies such as collateral to secure loans and guarantor system helps microfinance institutions to spread their risk. This theory is therefore relevant in supporting the dependent variable (portfolio quality) of the study.

Numerous studies have been conducted on the study constructs. On the basis of the reviewed literature, several research gaps were identified. For instance, Biguri and Stahl (2019) aimed at establishing how lender's requirements for collateral impacts on their policy decisions. In the study, empirical data obtained from listed firms in the US pointed to the fact that the constraints that were part of cash-collateral, negatively impacted decisions made on risk management but these decisions were not affected by the changes in real estate prices. The study focus was however on the impact of collateral requirements on policy decision made on corporates but did not shed light on the impact of collateral on corporation's portfolio quality.

The study also provided evidence that was contrary to the views provided in the trade-off theory relating to risk management and investment policy that was reached due to the constraints resulting to collateral requirements.

Another study focused on collateral determinants for SMEs focusing on the Visegrad countries, Rahman et al. (2017) used a survey done by World Bank and European Bank for Reconstruction and Development (EBRD) to get data. The findings obtained was after the use of as binary regression model that showed that borrowers with a higher risk need to have collateral and when asymmetric information is not available, then collateral incidence for SMEs is reduced. Further, according to the results female borrowers are likely to have collateral for their loans compared to their male counterparts. The results also revealed that longer maturing loans often require collateral compared to shorter maturing loans. The research aimed at reducing the determinants impacting collateral for borrowers unlike this study that looks at the effect of collateral on portfolio quality. Therefore there is a gap that needs to be filled.

Charles and Mori (2016) conducted a study to determine how collateral used by informal lenders impacted the repayment of loans. The study examines the effect of movable and immovable assets and guarantorship and relationship lending on loan repayment. With the dataset obtained from 835 borrowers from informal Tanzanian lending institution, the study conducted a descriptive analysis. According to the results, movable assets have a positive effect on loan borrowing and repayment. This study was however carried out among Tanzanian informal lenders and therefore the findings cannot be generalised to a study on microfinance institutions which are formal lenders in Kenya.

Ochola (2013) studied the effect of business collateral determinants on loan portfolio quality of Kenyan commercial banks. The study conducted a survey of existing literature and conducted interviews on 23 respondents. Data collection was done using questionnaires. The study conducted regression and correlation analysis and found that commercial banks require collaterals for any loan to be processed. The study also found that business collateral has a favourable significant effect on portfolio quality of Kenyan commercial banks. However, despite the relevance of this study to the current study, the study is limited in scope as it only focused on collateral and portfolio quality ignoring other microcredit requirements such as leverage level, average and liquidity level which was explored in the current study.

RESEARCH AND METHODOLOGY

This section presents the methods used to get the findings of this study. Included in this chapter are the data gathering methods and how this data was analysed. Further, the section explains the research design used and the population under study. The sampling technique, sample size, research instrument, and lastly validity and reliability of the research instrument are presented.

In regard to research design, the study identified survey research design as the most appropriate research design to help determine the association existing between collateral requirements on portfolio quality of microfinance institutions in Kenya. The design was selected because it enables the researcher to access to a vast information that is more accurate. The design was also appropriate since the study collected data on cross-section of microfinance banks in Kenya. Moreover, survey research design has proven to be one of the most effective and trustworthy research methods (Engel & Schutt, 2014). The population for the study consisted of the 13 microfinance banks in Kenya. According to CBK (2019) website, the number of licenced microfinance banks in Kenya is 13 microfinance institutions. However, only 9 out of the 13 microfinance institutions were operational in 2014. The study thus conducted a survey of the 9 microfinance, due to their small number.

Secondary data relating to a five year period ranging from year 2014 to 2018 was utilised. The data was collected through a secondary data collection sheet. The information required regarding portfolio quality was collected from published records maintained by microfinance institutions, AMFI Annual Reports, Central Bank reports, and Kenya National Bureau of Statistics (KNBS) reports. Data on microcredit requirements (relating to their customers) was obtained directly from microfinance institutions records. Variables in the study were operationalised as shown in Table 1.

Table 1: Operationalization of variables

Variable	Operationalization	Indicators	Measurement	Measurement Scale
Independent: Collateral Requirements	These are operational assets acceptable by a lender as security for a loan advanced to a borrower	Operational assets	Total assets – current liabilities	Ratio scale
Dependent: Portfolio Quality	This is loan at risk or non-performing loans representing possible loss if the borrower ultimately fails to repay the principal amount and accrued interest.	Portfolio at risk	Outstanding loan balances in arrears of 30 days, plus all loans refinanced or restructured/ Total the outstanding gross portfolio	Ratio scale

Source: Author and Literature Review (2020)

Obtained data was analysed via descriptive statistics such as standard deviations, averages, frequencies, and percentages as well as inferential statistics such as regression and correlation analysis with the help of Statistical Packages for Social Sciences (SPSS). Correlation analysis was conducted to determine the exact relationship between portfolio quality of microfinance institutions and collateral requirements and the direction of the relationship. On the other hand, regression analysis would show how portfolio quality is affected by collateral requirements as recommended by Taylor, Bogdan and DeVault (2015). The model tested was summarised as shown in equation 1.

$$Y = \beta_0 + \beta_1 X_{1t} + \epsilon \dots \dots \dots \text{Equation 1}$$

Where: Y= Portfolio Quality of Microfinance Institutions

β_0 = constant

β_1 = Coefficient of Collateral Requirements

X_1 = Composite Index for Collateral Requirements

t= Time period

ϵ = Error Term

The model significance was tested using the coefficient of determination (R²). On the other hand, F-statistic was used to determine fitness of the model at 95% confidence level. Student t-test and P-values at 5% significance level were used to establish whether a significant relationship exists between collateral requirements and portfolio quality.

Results and Discussions

Descriptive results are first presented followed by correlation and regression results.

Descriptive Results

Collateral requirements were measured through operational assets, expressed as the difference between total assets and current liabilities. While portfolio quality (dependent variable) was measured through portfolio at risk measured as the ratio of total outstanding loans in arrears of 30 days plus all loans refinanced or restructured to total outstanding gross loan portfolio. The summary of descriptive analysis was as shown in Table 2.

Table 2: Descriptive Statistics

	N	Mean	Std. Deviation	Min	Max
Collateral Requirements	45	1165.1846	1948.37313	27.00	5963.00
Portfolio Quality	45	0.2018	0.14598	0.02	0.66

Source: Study Data (2020)

Table 2, showed that collateral requirements (representing operational assets) averaged sh.1165.1846 million shillings. These results suggest that on average, borrowers in microfinance banks in Kenya had sh. 1165.1846 in operating assets. However, while some borrowers had high volumes of operating assets as shown by a maximum of sh.5963.00 million, some had low volumes of operating assets as show by a minimum of sh. 27.00 million. Similar results are exhibited by a high standard deviation of sh. 1948.37313 million. This is an indication that there was high variation in operating asset among the MFIs customers. Results shown on this variable were in congruence with postulations of Islam (2016) and Sunday et al (2018) who insinuated that that most individuals and small businesses searching for credit facilities in MFIs have little assets to pledge as collateral.

Correlation Analysis

Correlation analysis was conducted to test the strength and the direction of the relationship existing between portfolio quality, collateral requirements, average profits, leverage level, and liquidity level. Pearson correlation coefficient was used to determine the strength of the relationship while the significance of the relationship was determined through the P-value at 0.05 level of significance. Table 3 summarizes obtained findings.

Table 3: Correlation Results

		Portfolio Quality	Collateral Requirements
Portfolio Quality	Pearson Correlation	1	
	Sig. (2-tailed)		
	N	45	
Collateral Requirements	Pearson Correlation	-.384**	1
	Sig. (2-tailed)	.002	
	N	45	45

Source: Study Data (2020)

Results in Table 3 indicates that portfolio quality was negatively correlated with collateral requirements ($r = -0.384$; $P=0.002$). From these results, the study inferred that an inverse relationship does exist between portfolio quality and collateral requirements such that as operating assets owned and controlled by customers increase the portfolio at risk increases. This relationship was found to be significant at 0.05. Similar results were presented by Charles and Mori (2016) who alluded that a positive relationship exists between availability of noncurrent assets access to debt capital and loan repayment. Consequently the guarantorship system enables informal lending institutions in Tanzanian to reduce risk of default and improve portfolio quality.

Regression Results

Regression analysis was conducted to indicate the nature of the association existing between collateral requirements and portfolio quality. Multiple linear regression analysis was conducted in which portfolio quality was regressed on collateral requirements. Table 4 presents the model summary.

Table 4: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.782 ^a	0.611	0.602	0.16961

a. Predictors: (Constant), Collateral Requirements, Leverage Level

Source: Study Data (2020)

Model summary shown in table 4 showed an R Square (r^2) of 0.611 indicating collateral requirements predicted 61.1% of all changes in portfolio quality. On the other hand, the results show that 38.9% of all variations in portfolio quality were determined by other variables other than collateral requirements.

Analysis of Variance (ANOVA) was conducted to establish the appropriateness of model fit. The results were as shown in Table 5.

Table 5: ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1.946	1	1.946	67.646	0.000 ^b
	Residual	1.237	43	0.029		
	Total	3.183	44			

a. Dependent Variable: Portfolio Quality

b. Predictors: (Constant), Collateral Requirements

Source: Study Data (2020)

From the results in table 5 it was observed that the F-statistic was equal to 67.646. This value was much greater than the F-critical value (1, 43=4.067.). The results further showed that the value of F was significant at 0.05 significance level (0.000<0.05). Consequently, on the basis of F-value and significance level, the study concluded that the model was fit to predict portfolio quality based on collateral requirements. To establish the significance of the independent variables in predicting the dependent variable t-test was conducted. Table 6 summarizes the findings.

Table 6: Coefficients^a Table

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	0.375	0.172	0.278	2.180	0.034
	Collateral Requirements	-0.186	0.079	0.132	2.354	0.023

a. Dependent Variable: Portfolio Quality

Source: Study Data (2020)

The regression model was summarised as follows;

$$\text{Portfolio Quality} = 0.375 - 0.186 \text{ Collateral Requirements}$$

As shown in table 6 the constant had a coefficient of 0.375. This means that if all other factors were held constant, portfolio quality of microfinance institutions in Kenya would be equal to 0.375. Implying that 25% of the gross loan portfolio would always be at risk of non-repayment with or without collateral requirements. The constant was significant at 0.05 (0.034<0.05). At the same time, it was observed that collateral requirement’s coefficient of -0.186 suggested that a positive unit change in operational assets while other factors remained constant would result in a 0.186 decrease in portfolio quality of microfinance institutions. This relationship was however significant at 0.05 Significance level (0.023< 0.05) indicating that collateral requirement was significant in explaining the variations in portfolio quality. These results concurred with the postulations of Sunday et al (2018) who postulated that low value collateral significantly increase portfolio at risk. On the other hand, Guerrieri and Iacoviello (2017) was of the opinion that collateral forces borrower to repay their loans so as not to lose their assets in the event of default which ultimately leads to reduced portfolio at risk. Charles and Mori (2016) also found that assets have a positive effect on loan borrowing and repayment.

CONCLUSION

The study sought to establish the effects collateral requirements have on quality of portfolios among MFIs in Kenya. In order to achieve this objective, the study tested the hypothesis that collateral requirement have no significant effect on portfolio quality of microfinance institutions in Kenya. The findings obtained on this variable indicated that for every one shilling of loan advanced, MFI banks required sh. 1.4057 in operational assets. However, there were high variations among the MFI banks on this attribute. Arising from data analysis, the study established that collateral requirement positively and significantly correlated with portfolio quality of microfinance institutions in Kenya. It was also established that increasing operational assets significantly leads to a decrease in portfolio at risk of microfinance institutions in Kenya. Consequently, the study concluded that a collateral requirement has a significant effect on portfolio quality of microfinance institutions in Kenya.

RECOMMENDATIONS

Following the conclusion of the study that collateral requirement has a significant effect on the quality of portfolio among Kenyan microfinance institutions, the study recommendation was that management of microfinance institutions in Kenya should always emphasise on operational assets when determining the amount of credit to be extended to their clients. Further, it is the view of the study that microfinance institutions should seek to follow-up on their borrowers to ensure that the assets used a collateral continue in existence over the loan repayment period to avoid exchange or disposal of such assets. The study also recommends that microfinance institutions should emphasise on more liquid assets.

Contribution to the Body of Knowledge

The study contributes to the body of knowledge by developing a conceptual framework for improving the quality of microfinance institution's portfolio through demanding collateral, which was earlier missing. The study also contributes theoretically by illustrating the applicability of agency theory and modern portfolio theory in the context of portfolio quality of microfinance institutions in Kenya. Specifically the study outlined that, among other strategies, by demanding a wide range of collateral microfinance institutions are able to minimise default risk thus improving the quality of their portfolio. Empirically, the study contributes to the body of knowledge by filling the gap in literature on the relationship existing between collateral requirements and portfolio quality of microfinance institutions in Kenya, which was earlier identified.

Suggestion for Further Research

The study suggests that other studies should be conducted to establish other determinants of portfolio quality among deposit taking and other non-deposit taking MFIs such as average profits, leverage level and liquidity level.

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