

DETERMINANTS OF LOAN PORTFOLIO QUALITY IN INVESTMENTS GROUPS: A CASE STUDY OF SIDIAN BANK

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ABSTRACT

The objective of the study was to establish portfolio quality determinants in investment groups financed by Sidian bank in Nairobi region. Specifically, the study sought to determine the effects of macroeconomic, group leverage, group capitalization and group characteristics on portfolio quality of investment groups. The study adopted a case study research design the target population being all the 56 investment groups in the 9 branches under Sidian bank within Nairobi region. The study employed secondary data, which was obtained from Sidian bank offices and investment groups within Nairobi region. Data analysis was conducted using descriptive statistics including percentages, frequencies, means and standard deviation as well as inferential analysis via correlation and multiple regression analysis. The study established that macroeconomic variables, group leverage level, group capitalization and group characteristics positively and significantly influences portfolio quality of investment groups financed by Sidian bank in Kenya. It was also established that group

leverage had the greatest influence on portfolio quality of investment groups financed by Sidian bank in Kenya followed by macroeconomic variables while group capitalization level then group characteristics had the least effect on the portfolio quality of investment groups financed by Sidian bank in Kenya. The study recommends that Sidian bank should manage their portfolios by understanding risk exposure for each credit but also how the risks of individual loans and portfolios are interrelated. The study also recommended that, banks should be allowed to invest more in loans and advances as long as such banks have enough reserves to finance such investments and that banks should be allowed to scale up their operations so long as there is adequate capitalization to support their growth. The study further recommends that regulatory authority (CBK) and other stake holders should create an enabling environment that removes all these inefficiencies to the policy concern of high cost of credit.

Key Words: *loan portfolio quality, investment groups, Sidian Bank*

INTRODUCTION

Commercial banks have for long been the main lenders in all economies worldwide. Research show that micro credit plays a major role in development strategies. This is in view of its direct relationship to both poverty alleviation and improvement of the living standards. Both World Bank (2014) and United Nations Development Programme (UNDP) (2011) confirm that access to credit and gender inequalities in developing societies inhibit economic growth and development. The emergence of micro credit sector has been mainly driven by Non-governmental organizations (NGOs) that are donor supported. However, initial attempts into micro lending were made by governments through creation of development banks that were meant to allocate credit to certain sectors at subsidised rates. Studies have shown that directed

credit has undermined development of sound financial systems in many third world countries mainly because the loans are limited to budgetary allocation and are priced below market rates (Knaup & Wagner, 2012).

To date commercial banks are still largely absent in the provision of micro credit. This phenomenon may be attributed to credit policies associated with loans provided by the formal sector. Since many businesses in small and micro enterprise sector are largely poor, lack of normal tangible assets that can be pledged as collateral in conventional lending, banks are unwilling to provide credit facilities to them (Love & Ariss, 2014). This is because they are perceived to be highly risky and un-deserving of any credit even though they bank with the banks. Moreover, the costs associated with administering and monitoring credit services are quite high. To bridge this gap, the micro finance institutions have developed specific policies that target and feed loans to the small-scale enterprises (Swamy, 2013).

Micro credit focuses on improving the standards of living and access to loan facility among low-income earners and needy people in the society. It involves the provision of services and facilities targeting the poor and the low-income earners such as credit, saving, and insurance. Micro credit gives access to services to average earners wishing to access money to improve income-generating activities. Financial services of this nature are offered to those that depend on their small-scale economic activities and businesses who are considered highly risky by the mainstream commercial banks (Love & Ariss, 2014).

Since many businesses in small and micro enterprise sector are largely poor, lack of normal tangible assets that can be pledged as collateral in conventional lending, banks are unwilling to provide credit facilities to them (Love & Ariss, 2014). This is because they are perceived to be highly risky and un-deserving of any credit even though they bank with the banks. However, research show that the providers of micro credit who are mainly micro finance institutions, are faced with the challenge of high default rate on loans advanced, sound credit management techniques are rarely in place, and even if they are, they are largely ignored (Berg, Puri & Rocholl, 2014) which adversely affect the quality of portfolio.

In Sidian bank credit facility is provided through a group or on individual basis to assist in start-up businesses or to grow an existing venture (Mwangi & Muturi, 2016). Group loans are based on traditional rotation credit arrangement, which has received large amounts of attention in recent years from the major development agencies and banks. Micro-credit takes care of the under privileged in the society who have no likelihood of accessing financial services from the commercial banking sector. The ultimate goal of micro-finances is to help low-income earners become self-reliant and sufficient through provision of micro-saving, borrowing and insurance cover (Milani, 2014).

Several studies have been carried out attempting to explain the determinants of portfolio quality. Internationally, Knaup and Wagner (2012), Makri, Tsagkanos and Bellas (2014) and Bougateg

and Bougatef (2016) sought to establish determinants of loan portfolio quality. Locally, Githinji (2010) evaluated operating efficiency and loan portfolio quality, Ochola (2013) sought to establish determinants of business collaterals and loan portfolio quality while Nyora (2015) studied the relationship between portfolio holding and financial performance.

Based on the reviewed literature, this study notes that, none of the studies reviewed has established the effect institutional micro-credit determinants have on portfolio quality of investment groups financed by Sidian bank in Nairobi region. This study therefore sought to fill this gap by answering the question; what is the determinants of portfolio quality in investment groups under Sidian bank in Nairobi region?

LITERATURE REVIEW

Modern Portfolio Theory (MPT) attributed to Harry Markowitz, which was published in his paper 'Portfolio Selection' in the Journal of Finance, 1952 proposes a hypothesis on the basis of which, expected return on a portfolio for a given amount of portfolio risk is maximized or the risk on a given level of expected return is minimized. According to Pfaff (2012), the theory shows how rational investors diversify in order to optimize their portfolios. Simply put, the theory emphasizes on the importance of diversification to reduce risk. The Modern Portfolio Theory links the expected rate of return of portfolio to the expected risk showing the importance of diversification in the minimization of portfolio risk hence its importance for consideration as it provides a mathematical linkage between the determinants of portfolio quality in investment groups.

Information asymmetry (Armstrong, Core, Taylor and Verrecchia, 2011) refers to a situation where one party has more or better information than the other. Asymmetric information (Suri and Adnan, 2016) is more prevalent in financial markets such as borrowing and lending where the borrower has much better information about his financial state than the lender. Finance theory postulates that information asymmetry can constrain all types of external financing by either limiting availability or increasing costs. Moreover, information asymmetry should affect the acquisition and use of microfinance bank loans since microcredit loan is a primary source of firm liquidity. The theory explains that in the market, the party that possesses more information on a specific item to be transacted is in a position to negotiate optimal terms for the transaction than the other party (Dutta & Folta, 2015). It influences a lender's willingness to lend. On an indirect basis, information asymmetry may also influence line of credit availability and use since some sources of repayment are based on access to public capital markets (Hill, Kelly & Hardin, 2010).

Agency theory first conceived by Ross (1973) and Mitnick (1973) suggests that a divergence in interests between the principle and the agent develops into an agency conflict. In a firm, the dominant agency relationship is between the owners of the firm and the management. The theory therefore explains the relationship that exists between the management of the organization and

the shareholders (Miller & Sardais, 2011). An agency relationship arises where one party known as the principal gives legal authority to another party known as the agent to act on the principal's behalf in dealing with third parties. According to the theory, the management is usually considered as an agent who has been contracted by the stockholders to work towards enhancing the stockholder value through good financial performance (Bosse & Phillips, 2016). The management is therefore expected to act in the best interests of the owners and enhance the financial performance of the organization. Consequently, microfinance institutions with higher leverage or lower equity are associated with lower portfolio quality. In terms of bank size, smaller banks are more efficient whereas medium size and larger banks are cost efficient (Ndungu & Njeru, 2014).

In financial intermediation theory, financial intermediation involves surplus units depositing funds with financial institutions who then lend to deficit units. In earlier studies of financial intermediation, such as Gurley and Shaw's (1960), the main activity of intermediaries was the transformation of securities issued by firms (shares and bonds) into securities demanded by investors (deposits). Financial intermediaries are valuable because they provide services of divisibility and risk transformation, which borrowers cannot obtain on their own under identical conditions due to transaction costs. Banks, savings and credit cooperatives (SACCO) and microfinance institutions have always been the most important financial intermediaries in virtually all economies. The results from their role as providers of liquidity insurance and monitoring services and as producers of information (Poghosyan, 2013). By issuing demand deposits, banks can improve on a competitive market because these deposits allow for better risk sharing among households that face idiosyncratic shocks to their consumption needs over time (Phelan, 2017). The provision of liquidity insurance explains the liability side of the bank's balance sheet while provision of monitoring services explains the asset side of the balance sheet (Hermes & Lensink, 2013).

Moreover, the study reviewed existing empirical literature on the study variables both internally and locally. The specific variables covered are; macroeconomic variables, group leverage level, group capitalization and group characteristics and their relationship with portfolio quality. On a global perspective, Siddiqui and Shah (2012) carried out a study on the impact of interest rates volatility on Nonperforming loans in Pakistan. The main objective of the study was to determine the impact of interest rates volatility on Nonperforming loans in Pakistan. The study found that rising NPLs in Pakistan are significantly but not solely affected by the volatility in the cost of borrowing. In a study to explore the macroeconomic and bank-specific determinants of non-performing loans in

Greece Banks, Louzis, Vouldis and Metaxas (2012) established that for all loan categories, NPLs in the Greek banking system can be explained mainly by macroeconomic variables (GDP, unemployment, interest rates, public debt) and management quality. Similarly, Ghosh (2005) sought to establish if leverage influence banks' non-performing loans in India and found that lagged leverage to be an important determinant of bad loans of banks the leverage ratio can serve

as a useful signpost of asset quality and second, the analysis points to the need to improve the collection of data from the corporate sector.

Furthermore, Rossi, Schwaiger and Winkler (2009) sought to establish how loan portfolio diversification affects risk, efficiency and capitalization. The study found that although diversification negatively affects cost efficiency, it increases profit efficiency and reduces banks' realized risk. Finally, diversification seems to have a positive impact on banks' capitalization. Roslan and Karim (2009) conducted a study on the determinants of microcredit repayment in Malaysia to establish the determinants of microcredit repayment in Malaysia based on the case of Agrobank. The results of Probit and Logit models showed that the probability for loan repayment default is influenced by the gender of the borrower, business activity type and amount of loan, repayment period and training. Similarly, Giné and Karlan (2014) evaluated group versus individual liability, Short and long-term evidence from Philippine microcredit lending groups and found no increase in short-run or long-run default and larger groups after three years in pre-existing areas, and no change in default but fewer groups created after two years in the expansion areas.

Locally, Mboka (2013) studied the effects of macroeconomic variables on nonperforming loans of commercial banks in Kenya and found a strong correlation between inflation and gross domestic product and current account deficit. GDP also correlated strongly with inflation and Money supply. CAD correlated strongly with inflation only while Money supply correlated strongly with GDP. In determinants of micro credit performance in micro finances in Kenya. The objective of this study was to establish factors that determine micro credit performance in Kenya, Munguti (2014) established that the determinants of micro credit performance include the age of the borrower, gender and level of education. On the other hand, Chemjor (2007) sought to determine the significance of the factors contributing to non-performing loans in Commercial Banks in Kenya. The findings of this study revealed that borrowers' company dissolution have the highest significant contribution to non-performing loan problem. Similarly, Waweru (2010) studied factors influencing repayment of bank loans and established that demographic factors influenced loan repayment both positively and negatively.

Moreover, Sungwacha (2012) studied factors influencing repayment of loans among group borrowers focusing on group businesses in Bungoma County. The study showed that poor loan repayment results from lack of clients to identify key market conditions prior to investing. Evaluating clients before giving out loans, increases the probability of repaying as it minimizes loaning potential defaulters. Participating in credit camps by group members increases repayment discipline as members utilize the forum to encourage each other to repay and evaluate new members. Lastly, loan disbursement procedure has an impact on loan repayment with cash disbursement being recommended because clients get a chance to select suitable investment projects. Kitaka and Kalio (2013) assessed the influence of structured loans on agribusiness borrowing at first community bank, Kenya. Adopting a descriptive research design, a sample of 35 the study established that there exist a strong positive and statistically significant relationship

between repayment structure and Agribusiness borrowing. Further findings revealed the existence of a negative and statistically significant relationship between credit risk mitigation and Agribusiness borrowing.

Based on the reviewed empirical literature it comes out clearly that although numerous studies have been conducted on the study constructs, most of these studies concentrated on the broader aspects of factors influencing non-performing loans and the effect of non-performing loans on portfolio quality. It was noted that most studies concentrated on single variables such as interest rates volatility macroeconomic determinants, microeconomic determinants consumer loans, business loans, mortgages loans, loan size, borrower's gender and level of education as determinants of portfolio quality and ignored important determinants such as group characteristics, capitalisation level, and leverage level. Besides, the study noted that majority of the existing literature relates to other jurisdictions such as Pakistan, India, United States, Austraria, Malaysia, Philippine and Nigeria. The study finds that some these study contexts such as United States and Malaysia are significantly different from the current study context in terms of economic development and credit policies.

RESEARCH METHODOLOGY

The study adopted a case study research design because the study sought to establish in details the determinants of portfolio quality in investment groups under Sidian bank. The design helps the researcher to describe the state of affairs, as it exists at present in the study (Taylor, Bogdan & DeVault, 2015). This design was useful in studying the inter-relations between the variables already mentioned in the conceptual framework (Churchill & Iacobucci, 2010). The study target population was all the 56 investment groups in the 9 branches under Sidian bank within Nairobi region in Kenya (Sidian bank, 2017). This region was because it has the highest number of investment groups that are financed by Sidian bank and has the most active investment groups. The study was a census of all the 56 investment groups under Sidian bank in Nairobi region.

Quantitative secondary data obtained from Sidian bank offices in each of the branches within Nairobi region was used. This data was used because data relating to investment groups financed by Sidian bank is readily available from the credit manager and other credit officers in Sidian bank offices as well as their website (<https://www.sidianbank.co.ke>). In addition, data on group leverage, group capitalization and group characteristics as well as portfolio quality was obtained from the bank website. Data relating to macroeconomic variables was obtained from central bank website (<https://www.centralbank.go.ke>) as well as Kenya bureau of statistics (KNBS) website, <https://www.knbs.or.ke>.

Data obtained was entered into Statistical Packages for Social Sciences (SPSS V 21). Descriptive statistics including percentages, frequencies, means and standard deviation was used to analyse quantitative information. Inferential analysis was carried out using correlation analysis and regression analysis. Correlation analysis was used to establish the relationship that exists

between the independent variable and the dependent variable. Regression analysis on the other hand was conducted to show how macroeconomic variables, group leverage level, group capitalization and group characteristics influence portfolio quality of investment groups financed by Sidian bank in Kenya. Portfolio quality was measured using portfolio at risk.

The regression model was as follows:

$$Y = b_0 + b_1x_1 + b_2x_2 + b_3x_3 + b_4x_4 + \varepsilon \dots\dots\dots I$$

Where: Y =Portfolio quality as measured by Portfolio at Risk; Portfolio at Risk = (Outstanding Balance on Arrears over 30 days / Total Outstanding Gross Portfolio (Total loan)); x_1 = Macroeconomic variables as measured by interest rate, inflation rate, exchange rates and unemployment rate; x_2 = Group leverage level measured by Debt to equity ratio =Total liabilities/ Total equity; x_3 = Group capitalization measured = Total assets - Total liabilities; x_4 =Group characteristics measured by Savings level, Group size and Level of income; ε = Error term; b_0 = Constant Term; b_1, b_2, b_3 and b_4 = Beta coefficients.

RESULTS AND DISCUSSION

This section provides a summary of the findings from data analysis. In order to effectively analyse the quantitative data, descriptive statistics including percentages, frequencies, means and standard deviation was used. Inferential analysis was carried out using correlation analysis and regression analysis.

Descriptive statistics was conducted to provide a general description of the study variable characteristics including the, mean, standard deviation, skewness and kurtosis for portfolio at risk, group leverage level, group capitalization measured and group characteristics. Table 1 provides a summary of the descriptive results for portfolio at risk, group leverage level, group capitalization and group characteristics. The table shows that portfolio at risk had a mean score of 0.291. Analysis of skewness shows that portfolio at risk is asymmetrical to the left around their mean. The kurtosis for portfolio at risk was greater than zero hence their data exhibits leptokurtic distribution (Chang, 1999). Quality of assets in lending technologies is normally measured by the quantum of non-performing loans and has been found a direct and interlinked relationship between both. In addition, group leverage level had a mean score of 0.545. Analysis of skewness shows that group leverage level is asymmetrical to the left around their mean. The kurtosis for group leverage level was greater than zero hence their data exhibits leptokurtic distribution. The findings are also consistent with the conclusions of Saunders and Cornett (2014) who argued that the higher the leverage, the higher the amount of debt in the capital structure of a firm. When a firm decides to borrows, it must decide not only on the amount but also on the type of debt finance, on the maturity and on the priority of the debt.

Table 1: Descriptive Statistics for Loan Portfolio

Year	2012	2013	2014	2015	2016	Aggregate
Portfolio at risk						
Annual Average (Mean) for	0.379	0.262	0.303	0.248	0.264	0.291
Portfolio at Risk						
Std. Dev.	0.021	0.0058	0.053	0.081	0.055	0.043
Skewness	1.445	1.037	1.180	1.078	0.549	1.058
Kurtosis	0.053	0.041	0.237	0.113	0.119	0.113
Group leverage level						
Annual Average (Mean) for	0.323	0.814	0.446	0.813	0.315	0.545
Group leverage level						
Std. Dev.	0.325	0.266	0.474	0.118	0.224	0.28
Skewness	0.462	0.737	0.340	0.538	0.521	0.527
Kurtosis	0.521	0.412	0.621	1.013	1.203	0.752
Group capitalization						
Annual Average (Mean) for	7.65	7.744	7.912	8.005	8.208	6.696
Group Capitalization						
Std. Dev.	0.368	0.684	0.598	0.228	0.844	0.545
Skewness	-0.591	-0.811	-0.766	-0.966	-0.781	-0.784
Kurtosis	-0.276	-0.516	-0.326	-0.203	-0.326	-0.329
Group characteristics						
Annual Average (Mean) for	7.492	7.631	7.747	7.877	7.927	6.603
Group Characteristics						
Std. Dev.	0.351	0.431	0.383	0.241	0.105	0.303
Skewness	-0.133	0.232	-0.015	-0.314	-0.364	-0.118
Kurtosis	-1.978	-0.879	0.062	0.124	-1.965	-0.927

Moreover, the study found that group capitalization measured had a mean score of 6.696. Analysis of skewness shows that group capitalization measured is asymmetrical to the left around their mean. The kurtosis for group capitalization measured is less than zero hence their data depicts platykurtic distribution. This is consistent with Malkiel (2014) who argues that market value of capital and basically depends on the price of the company's stock in an open market. An investment group may be overcapitalized, undercapitalized or medium capitalized. Group characteristics on the other hand had a mean of 6.603. Analysis of skewness shows that group characteristics are asymmetrical to the left around their mean. The kurtosis for group characteristics is less than zero hence their data depicts platykurtic distribution. These findings agree with Resnik (2010) who identifies savings as a means of determining who to give credit and how much, whereby a borrower is required to accumulate savings both prior to and after borrowing. Table 2 provides the descriptive results for macroeconomic variable

Table 2: Descriptive Statistics Macroeconomic variable

	Mean	Std. Dev.	Skewness	Kurtosis
Interest rate	13.8	0.865	0.869	-0.141
Inflation rate	6.976	2.871	2.267	6.090
Exchange rates	91.65	7.662	0.033	-0.008
Unemployment Rates	11.68	0.1584	-0.006	-0.716

The findings in Table 2 showed that interest rate had a mean score of 13.8, inflation rate had a mean score of 6.976, and exchange rates had a mean score of 91.65 while unemployment rate averaged 11.68. Analysis of skewness shows that interest rate, inflation rate, exchange rates and unemployment rate were asymmetrical to the right around their mean. The kurtosis for interest rate and exchange rates and unemployment rates were less than zero hence their data exhibits platykurtic distribution while for inflation rate was greater than zero hence their data depicts leptokurtic distribution. This is in agreement with Ng'etich and Wangari (2011) who observed that high interest rates have the negative effect of increasing the cost of borrowing and consequently limiting the level of aggregate investment and consumption and the overall portfolio quality in an institution. Interest rate levels are influenced by markets forces, supply and demand factors, inflation and default risk.

INFERENCE ANALYSIS

Correlation Analysis

Correlation analysis was used to establish the relationship that exists between the independent variable and the dependent variable. The findings in table 3 show that macroeconomic variables and portfolio quality of investment groups financed by Sidian bank in Kenya are positively correlated as shown by 0.847. Further, as shown by a coefficient of 0.858, Group leverage level and portfolio quality of investment groups financed by Sidian bank in Kenya are positively correlated. It was also noted that macroeconomic variables were positively and significantly correlated with group leverage, group capitalization and group characteristics as shown by 0.371, 0.492 and 0.206 coefficients respectively. Moreover, the study found that group capitalization, group characteristics and portfolio quality of investment groups financed by Sidian bank in Kenya are strongly and positively correlated as shown by a coefficient of 0.764 and 0.740 respectively. It was further established that these coefficients were significant at 95% confidence level. This concurs with Nduba (2010) who notes that customer characteristics include, character, capacity, condition, collateral contribution and finally, common sense. Character refers to maturity, honesty and trustworthiness, integrity, discipline, reliability and dependability of a customer. Character is no doubt the most important quality of any client.

Table 3: Correlation Matrix

		Portfolio quality	Macroeconomic variables	Group leverage level	Group capitalization	Group characteristics
Portfolio quality	Pearson Correlation	1				
	Sig. (2-tailed)	.				
	N	56				
Macroeconomic variables	Pearson Correlation	.847*	1			
	Sig. (2-tailed)	.047	.			
	N	56	56			
Group leverage level	Pearson Correlation	.858*	.371*	1		
	Sig. (2-tailed)	.000	.002	.		
	N	56	56	56		
Group capitalization	Pearson Correlation	.764*	.492*	.666*	1	
	Sig. (2-tailed)	.002	.000	.000	.	
	N	56	56	56	56	
Group characteristics	Pearson Correlation	.740*	.206*	.252*	.272*	1
	Sig. (2-tailed)	.009	.017	.003	.038	.
	N	56	56	56	56	56

Regression Analysis

The study conducted multiple regression analysis to show how macroeconomic variables, group leverage level, group capitalization and group characteristics influence portfolio quality of investment groups financed by Sidian bank in Kenya. The regression results were as shown in table 4, 5 and 6.

Table 4: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.837	0.701	0.678	2.113

Table 5: ANOVA

Model	Sum of Squares	Df	Mean Square	F	Sign.
Regression	566.126	4	141.532	29.930	.000
1 Residual	241.168	51	4.729		
Total	807.294	55			

Table 6: Coefficients

Model	Un standardized Coefficients		Standardized Coefficients	t	Sig
	B	Std. Error	Beta		
(Constant)	0.988	0.112		8.821	.000
Macroeconomic variables	0.856	0.393	0.733	2.178	.034
Group leverage level	0.896	0.345	0.761	2.597	.012
Group capitalization level	0.767	0.239	0.718	3.209	.002
Group characteristics	0.742	0.298	0.702	2.490	.016

The regression equation obtained from this outcome was:

$$Y = 0.988 + 0.856X_1 + 0.896X_2 + 0.767X_3 + 0.742X_4$$

As per the study results, it was revealed that if all independent variables were held constant at zero, then the portfolio quality of investment groups financed by Sidian bank in Kenya will be 0.988. The study also revealed that if macroeconomic variables increase by one unit, then portfolio quality of investment would increase by 0.856. This is in line with Rashid and Jabeen (2016) observed that inflation ties up money that could be used to pay for loans by individuals and firms. Inflation disturbs the distribution of income and wealth by creating unemployment and lowering economic growth making it difficult for borrowers to arrange for loan repayment. The study further revealed that if Group leverage level changes it would lead to 0.896 change in portfolio quality of investment groups financed by Sidian bank in Kenya. Moreover, the study showed that if all other variables were held constant, a unit variation in group capitalization level increased portfolio quality of investment groups financed by Sidian bank in Kenya by 0.767. The study revealed that variation in group characteristics would change the portfolio quality of investment groups financed by Sidian bank in Kenya by 0.742. This corresponds to Saunders and Cornett (2014) who opined that companies have to decide on whether debt should be in the form of leases, convertible loans, loan capital, bank loans and overdraft, notes and bills; should be short or long-term and whether debt should be secured, unsecured or subordinated.

Generally, group leverage level had the greatest influence on portfolio quality of investment groups financed by Sidian bank in Kenya while group characteristics had the least effect on the portfolio quality of investment groups financed by Sidian bank in Kenya. All the variables were significant since p-values were less than 0.05. This conforms to Aaker (2009) findings that to manage their portfolios, bankers and other microfinance institutions must understand not only the risk posed by each credit but also how the risks of individual loans and portfolios are interrelated.

CONCLUSION

The study concluded that macroeconomic variables and group leverage level significantly influences portfolio quality of investment groups financed by Sidian bank in Kenya. In addition, the study concluded that group capitalization level variates portfolio quality of investment groups financed by Sidian bank. Furthermore, variation in group characteristics was found to influence the portfolio quality of investment groups financed by Sidian bank in Kenya.

RECOMMENDATIONS

Inflation disturbs the distribution of income and wealth by creating unemployment and lowering economic growth making it difficult for borrowers to arrange for loan repayment. Therefore, there is a need for the Government to generate policies to control inflation like Monetary policy where interest rates are set in which higher interest rates reduce demand, leading to lower economic growth and lower inflation and control of money supply which monetarists argue there is a close link between the money supply and inflation, therefore controlling money supply can control inflation.

The study recommends that Sidian bank need to manage their portfolios, by understanding that not only the risk posed by each credit but also how the risks of individual loans and portfolios are interrelated. These interrelationships can multiply risk beyond what it would be if the risks were not related. The study also recommended that, banks should be allowed to invest more in loans and advances as long as such banks have enough reserves to finance such investments and that banks should be allowed to scale up their operations so long as there is adequate capitalization to support their growth. The study further recommends that regulatory authority (CBK) and other stake holders should create an enabling environment that removes all these inefficiencies to the policy concern of high cost of credit.

REFERENCES

- Aaker, D. A. (2009). *Brand portfolio strategy: Creating relevance, differentiation, energy, leverage, and clarity*. New York: Simon and Schuster.
- Armstrong, C. S., Core, J. E., Taylor, D. J., & Verrecchia, R. E. (2011). When does information asymmetry affect the cost of capital? *Journal of Accounting Research*, 49(1), 1-40.
- Berg, T., Puri, M., & Rocholl, J. (2014). Loan officer incentives, internal ratings and default rates. In *AFA 2013 San Diego Meetings Paper*. doi: <http://dx.doi.org/10.2139/ssrn> (Vol. 2022972).
- Bosse, D. A., & Phillips, R. A. (2016). Agency theory and bounded self-interest. *Academy of Management Review*, 41(2), 276-297.
- Bougatef, K., & Bougatef, K. (2016). How corruption affects loan portfolio quality in emerging markets? *Journal of Financial Crime*, 23(4), 769-785.
- Chemjor, S. J. (2007). *Significance of the factors contributing to non-performing loans in Commercial Banks in Kenya* (Doctoral dissertation, University of Nairobi).

- Churchill, D. A., & Iacobucci, D. (2010). Market research. *Methodological Foundations*. New York: Simon and Schuster.
- Dutta, S., & Folta, T. B. (2015). Information asymmetry and entrepreneurship. *Wiley Encyclopedia of Management*.
- Gambacorta, L., & Mistrulli, P. E. (2004). Does bank capital affect lending behavior?. *Journal of Financial Intermediation*, 13(4), 436-457.
- Ghosh, S. (2005). Does leverage influence banks' non-performing loans? Evidence from India. *Applied Economics Letters*, 12(15), 913-918.
- Giné, X., & Karlan, D. S. (2014). Group versus individual liability: Short and long-term evidence from Philippine microcredit lending groups. *Journal of Development Economics*, 107, 65-83.
- Githinji, A. K. (2010). *A survey on the operating efficiency and loan portfolio quality indicators usage by microfinance institutions in Kenya*. (Doctoral dissertation), University of Nairobi, Kenya.
- Gurley, J. G., & Shaw, E. S. (1960). *Money in a Theory of Finance*. Brookings Inst Press.
- Hermes, N., & Lensink, R. (2013). *Financial development and economic growth: theory and experiences from developing countries*. Routledge.
- Hill, M. D., Kelly, G. W., & Hardin, W. G. (2012). Market value of REIT liquidity. *The Journal of Real Estate Finance and Economics*, 45(2), 383-401.
- Kitaka, A. N., & Kalio, A. M. *Assessing influence of structured loans on agribusiness borrowing at first community bank, Kenya*. (Doctoral dissertation, University of Nairobi).
- Knaup, M. & Wagner, W. (2012). A market-based measure of credit portfolio quality and banks' performance during the subprime crisis. *Management Science*, 58(8), 1423-1437.
- Louzis, D. P., Vouldis, A. T., & Metaxas, V. L. (2012). Macroeconomic and bank-specific determinants of non-performing loans in Greece: A comparative study of mortgage, business and consumer loan portfolios. *Journal of Banking & Finance*, 36(4), 1012-1027.
- Love, I. & Ariss, R. T. (2014). Macro-financial linkages in Egypt: A panel analysis of economic shocks and loan portfolio quality. *Journal of international financial markets, institutions and money*, 28, 158-181.
- Makri, V., Tsaganos, A., & Bellas, A. (2014). Determinants of non-performing loans: The case of Eurozone. *Panaeconomicus*, 61(2), 193-205.
- Malkiel, B. G. (2014). Is smart beta really smart? *The Journal of Portfolio Management*, 40(5), 127-134.
- Mboka, T. M. (2013). *Effects of macro-economic variables on nonperforming loans of commercial banks in Kenya* (Doctoral dissertation, University of Nairobi).
- Milani, C. (2014). Borrower-lender distance and loan default rates: Macro evidence from the Italian local markets. *Journal of Economics and Business*, 71, 1-21.
- Miller, D., & Sardais, C. (2011). Angel agents: Agency theory reconsidered. *The Academy of Management Perspectives*, 25(2), 6-13.
- Mitnick, B. M. (2015). Agency theory. *Wiley Encyclopaedia of Management*.
- Munguti, J. M. (2014). *Determinants of Micro Credit Performance in Micro Finances in Kenya* (Doctoral dissertation, University of Nairobi).
- Mwangi, B. W., & Muturi, W. (2016). Effects of credit risk management on loan repayment performance of commercial banks in Kenya. *International Academic Journal of Economics and Finance*, 2(2), 1-24.

- Nduba, F. M. (2010). *A survey of the factors that determine credit worthiness of small and medium enterprises for bank loans* (Doctoral dissertation, University of Nairobi, Kenya).
- Ndungu, C. G., & Njeru, A. (2014). Assessment of Factors Influencing Adoption of Agency Banking in Kenya: The Case of Kajiado North Sub County. *International journal of business and commerce*, 3(8), 91-111.
- Nyora, M. (2015). *Relationship between portfolio holding and financial performance of insurance companies in Nairobi County*. (Doctoral dissertation), University of Nairobi, Kenya.
- Ochola, F. O. (2013). *Determinants of business collaterals and loan portfolio quality of commercial banks' branches in Kisumu Municipality, Kenya*. (Doctoral dissertation), University of Nairobi, Kenya.
- Pfaff, B. (2012). Modern portfolio theory. *Financial Risk Modelling and Portfolio Optimization with R*, 46-53.
- Phelan, G. (2017). Correlated Default and Financial Intermediation. *The Journal of Finance*.
- Poghosyan, T. (2013). Financial intermediation costs in low income countries: The role of regulatory, institutional, and macroeconomic factors. *Economic Systems*, 37(1), 92-110.
- Rashid, A., & Jabeen, S. (2016). Analyzing performance determinants: Conventional versus Islamic banks in Pakistan. *Borsa Istanbul Review*, 16(2), 92-107.
- Resnik, B. L. (2010). Did Modern Portfolio Theory Fail Investors in the Credit Crisis? *The CPA Journal*, 80(10), 10.
- Roslan, A. H., & Karim, M. A. (2009). Determinants of microcredit repayment in Malaysia: the case of Agrobank. *Humanity & Social Sciences Journal*, 4(1), 45-52.
- Ross, S. A. (1973). The economic theory of agency: The principal's problem. *The American Economic Review*, 63(2), 134-139.
- Rossi, S. P., Schwaiger, M. S., & Winkler, G. (2009). How loan portfolio diversification affects risk, efficiency and capitalization: A managerial behavior model for Austrian banks. *Journal of Banking & Finance*, 33(12), 2218-2226.
- Saunders, A., & Cornett, M. M. (2014). *Financial institutions management*. McGraw-Hill Education.
- Siddiqui, S., Malik, K. S., & Shah, S. Z. (2012). Impact of interest rate volatility on non-performing loans in Pakistan. *International Research Journal of Finance and Economics*, 84, 66.
- Sungwacha, S. M. (2012). *Factors influencing repayment of loans among group borrowers: a case study of group businesses in Bungoma District* (Doctoral dissertation).
- Suri, A. K., & Adnan, J. (2016). Educational Institutions and Information Asymmetry Observation in UAE. *J Glob Econ*, 4(213), 2.
- Swamy, M. R. (2013). Modern Portfolio Theory. *Journal of Financial Management & Analysis*, 26(2), 84-94.
- Taylor, S. J., Bogdan, R., & DeVault, M. (2015). *Introduction to qualitative research methods: A guidebook and resource*. John Wiley & Sons.
- Waweru, C. (2010). *Factors influencing repayment of bank loans: a case of NIC bank limited, Nairobi Province Kenya* (Doctoral dissertation, University of Nairobi, Kenya).