

Moderating Effect of Firm Size on Financial Distress Factors and Financial Performance of Deposit Taking Saccos in Kenya

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Abstract: Sacco Societies have consistently employed various financial models to evaluate their financial performance. Nevertheless, recent research has highlighted a growing number of Sacco Societies facing financial challenges, which have hindered their overall performance. However, Sacco Societies have not adequately identified the whether firm size have moderating effect on financial distress and financial performance. The main objective of this study therefore, was to examine the moderating effect of firm size on the relationship between distress factors and financial performance of deposit taking Saccos in Kenya. This study was firmly grounded on Economies of scale theory. It employed a correlation research design where a census study was conducted on all deposit taking Sacco Societies registered with the Sacco Societies Regulatory Authority (SASRA). A data extraction sheet was used to collect panel data for all deposit taking Sacco Societies in Kenya for the period between 2018 and 2022. The study collect data from Audited Financial Report achieve validity and reliability of the data. Descriptive analysis and inferential analysis such as regression analysis and model specification tests was used to analyze data with the help of STATA software version 15. Five hypotheses were tested using the correlation and multivariate panel regression techniques. The study found that firm size had statistically significant moderating effect on this relationship between financial distress factors and financial performance of deposit taking SACCOs ($\beta_6 = -1.170$, $P = 0.00 < 0.05$). The study concluded that firm size had moderating effect the relationship between financial distress and financial performance. The study recommended SACCOs to grow their firms so as to mitigate the effect of financial distress resulting to sustainable financial performance.

Key Words: Firm Size, Financial Distress Factor, Financial Performance, Economies of Scale Theory, Correlation and Longitudinal Research Design, Deposit Taking, SACCOs, Kenya.

1. Introduction

Financial distress is a term used to describe financial difficulties such as default, flunk and inability to discharge all debts as they fall due (Pozzoli and Paolone, 2017). Kumaraswamy (2016) posits that though there is no general term, financially distressed firms show the following features in two successive years' negative gross income before depreciation and tax and negative net income before special items. Palinko and Svoob (2016), on the other hand, explain the stages that a company takes before being liquidated. Their model identified continuous lack of wealth growth as the primary cause of bankruptcy, followed by excessive debts and, lastly, firm liquidity.

Gladys (2021), examined Financial Distress and Financial Performance of Manufacturing, Construction and Allied Firms Listed in the Nairobi Securities Exchange, Kenya. An increase in firm size has a positive statistically insignificant effect on Return on Assets, but this effect is not related to financial performance. In the study firm size was examined as part of financial distress factors on financial performance. However, the current study used the following five financial ratios in the prediction of financial distress in the DTSACCOs; Financial leverage, operational effectiveness, asset quality, capital sufficiency, and liquidity ratios. However firm size was used as moderating variable.

Firm size has been acknowledged as a significant factor in determining the performance of banks (Mutunga & Owino, 2017). Dalci, Tanova, Ozyapici and Bein (2019) found in their study that firm size proved the moderating role between working capital management and profitability of non-financial firms. Further, they found out that larger banks typically possess economies of scale, greater access to funding, and a more diversified customer base, enabling them to withstand distress factors more effectively. Conversely, smaller banks may be more vulnerable due to limited resources, narrower product portfolios, and concentrated exposure to specific sectors or regions. The interaction between firm size and distress factors can result in differential effects on bank performance.

Moreover, the study by Kocenda, Iwasaki and Yoshisada (2021) established the moderating effect of firm size and results of their study suggests that larger banks have a higher probability of survival during financial crises, compared to smaller banks. They argue that larger banks can attract additional capital and liquidity more easily, as they are perceived as being too big to fail. Consequently, their performance may be less affected by distress factors compared to smaller banks.

In Iran, Alipour, Sheikhi, and Agajani (2019), aims to examine the impact of business size on the correlation between financial bankruptcy and capital structure in listed companies on the Tehran Stock Exchange. Finding showed that the level of financial leverage and the financial insolvency of businesses listed on the Tehran Stock Exchange are significantly correlated. The long-term debt ratio and the financial insolvency of the Tehran Stock Exchange-listed enterprises are significantly correlated. The short-term debt ratio and the financial insolvency of the Tehran Stock Exchange-listed enterprises are significantly correlated. The association between the level of financial leverage and the listed companies' financial bankruptcy is not significantly impacted by the company's size. The association between listed firms' long-term debt ratios and financial insolvency is significantly influenced by the firm's size.

Dalci *et al.* (2019) on their part opined that as the size of the firm becomes smaller, the impact of cash conversion cycle on ROA becomes stronger. These findings are supported by findings by Mutunga and Owino (2017) who found out that larger firms have a tendency to leverage. However, Bank for International Settlements (2018), found that smaller banks may be more resilient during economic downturns compared to larger banks. They argue that smaller banks have a better understanding of local markets, allowing them to establish closer relationships with borrowers and make more informed lending decisions. Thus, while distress factors can significantly impact the performance of banks, firm size plays a crucial moderating role in this relationship.

A study by the Bank for International Settlements (2018) found that larger banks are better positioned to handle adverse economic conditions and financial shocks compared to smaller banks. This is due to their ability to diversify risk, negotiate better funding terms, and leverage economies of scale. Larger banks may have the resources to invest in technology, risk management systems, and talent, which can enhance their ability to weather distress factors.

Muigai and Muriithi (2017), aimed to determine how business size affected the relationship between capital structure and financial distress of Kenyan listed non-financial firms. The natural logarithm of total assets was used to calculate the size of the company, and total debt, long-term debt, and short-term debt financing were used to operationalize capital structure. In particular, the study discovered that whereas debt often has a negative and significant impact on the investigated organizations' financial difficulties, as a firm grows in size, this influence changes to a positive and significant one. The study also discovered that while short-term debt is highly harmful, long-term debt utilization among large-scale businesses has a favourable and considerable impact. The study suggested that managers of listed non-financial organizations should constantly take the firm's size into account when deciding which leverage option is best for their entities based on these empirical findings.

Swalehe, Odock, and Wainaina's (2020) examine the impact of business size on financial performance for the period of 2007 to 2015. The study revealed that company size has a significant positive (weak) influence on company profitability. Oyugi (2013) examined the effect of company size on the financial performance of deposit-taking MFBs from 2012 to 2016 using regression analysis and secondary data in SPSS. It examined the relationship between the variables under study. The results demonstrate that the factors influencing the profitability of Kenya's commercial banks are those that were used as independent variables.

Olaniyi, *et al.*, (2017) also looked at the relationship between business size and profitability. The analysis's findings show a strong correlation between business metrics and profitability. Alex, (2023) used panel data from 2007 to 2016 to study the association between business size and financial performance across 43 commercial banks in Kenya. All of the independent factors were determined to be statistically significant in the research. The purpose of these research was to prove a causal link between business size and financial success. Examining the link between company size, financial performance, and distress indicators for deposit-taking SACCOs in Kenya is the goal of the current study.

Financially sound SACCOs are characterized by high liquidity, high profitability, revenue streams that are growing, ability to meet obligations as they fall due to ease of raising capital, compliance with statutory requirements, high employee stability both at management and support level and payment of attractive dividends to its members. Despite close supervision by SASRA report of 2022 which indicates that 51% of Saccos in Kenya have not been operational as they suffer from financial distress. This is evidenced by cash flow problems, failure to meet their obligations as they fall due such as payment of interest on borrowed loans, remitting statutory deductions of employees such as Pay as you earn and contributions to Saccos, declining profits, payment of low dividends, if any, to their members, failure to meet the demands of their clients for loans and withdrawal of savings, decline in membership and withdrawal of members, among others. In Nairobi County's Deposit Taking SACCOs experienced, it was found that there is a correlation between the financial distress of Deposit Taking SACCOs and the characteristics of the board, with board tenure, composition, and education having a statistically significant negative impact on financial distress. In another study purposed to look into how Kenyan Deposit Taking-SACCOs' financial performance is impacted by liquidity risk it was

revealed that, as determined by ROA, the financial performance of Deposit Taking-SACCOs has been unstable and inconsistent over time.

Further, in an investigation on how company factors affected the deposit taking savings and credit cooperative societies' profitability in Kenya, it was discovered that leverage had a statistically insignificant effect on Deposit Taking-Sacco profitability in Kenya. Return on equity and return on asset were employed in a study as dependent variables, and it was found that the quantity of distressed non-bank financial institutions is rising quickly. The study also discovered that among the listed firms in Bangladesh to determine how financial distress affects financial performance, financial performance is significantly impacted by their financial difficulties. A study done among manufacturing, construction, and related firms listed in Kenya concluded that liquidity had a statistically significant positive effect on return on assets; asset structure had a statistically significant negative effect on return on assets; leverage had no association with return on assets; and, finally, firm size had a positive but statistically insignificant effect on return on assets. The place of factors such as liquidity, operational efficiency, asset quality, capital sufficiency and firm size as a moderator distilled from various studies on financial distress in Kenyan SACCOs have not be established. The purpose of this study, therefore, is to examine the moderating effect of firm size on the relationship between financial performance of deposit taking SACCOs.

2. Literature Review

Theoretical Review

The study was anchored on the economies of scale theory which was developed by Marshall developed in 1890. Marshall argues that the benefits of economies of scale that arise from both internal and external economies which rely on a firm's unique resources and the expansion of the industry as a whole occur simultaneously with changes in a firm's size. Bottasso and Conti (2017) acknowledged the coexistence of internal and external economies of scale within the company, pointing out that economies of scale are primarily enjoyed by large firms and are related to low cost per unit of inputs purchased in large quantities, low capital cost of manufacturing, market control, technical improvement, risk tolerance, and managerial efficiency.

These provide a business a competitive edge since they raise the entrance requirements for potential rivals and improve a business' overall performance (Manole and Anghel 2019). The theory also highlights that the benefits of economies of scale experienced by small businesses are restricted to the overall growth of industrial production.

According to the theory, economies of scale have a maximum limit after which businesses begin to encounter diseconomies of scale and falling returns to scale. According to Zekos (2018), the economies of scale that large companies benefit from come from their ability to bargain for low-cost capital, better discount conditions, and rebates because of massive purchases. Additionally, the author compared economies of scale to the result of specialization, labor division, and the distribution of high fixed costs over a large volume of output. The main benefit of this theory is that it explains how businesses may use economies of scale to increase financial performance dependent on the size of the business (Ren & Jie, 2019).

Economies of scale are cost savings that companies get when their volume of production increases. Businesses have greater opportunity to drop their prices in order to increase sales when costs are reduced. The main advantage of economies of scale is this. The hypothesis lowers the cost of a production unit. This enabled upper management to train and hire more talent, as well as increase the pay ranges of their staff members. These are all factors that supported the business's ongoing expansion. The approach raises profitability by lowering the overall financial overhead of the business and, consequently, the bottom line. Over time, the capital savings increased, providing management with more flexibility to distribute bigger returns or dividends to shareholders.

When the company expenses have decreased then there is greater financial freedom, the company can attempt to extend its operations to other regions. The management may think about buying a business or starting a new subsidiary in a different area. (Mathur, 2022)

According to Mathur (2022) the disadvantage of this idea is that the company's procedures start to become less effective beyond a certain point in output. Diseconomies of scale result from an increase in the average cost per unit when the business starts to produce more than a certain number of units. It became more difficult for management to keep control over business operations as the company expands. It was challenging to manage thousands of employees with a high production. Consequently, this reduced the operational efficiency of the business. Numerous massive enterprises had an effect on the environment. The more the corporation expands, the greater the harm to the environment.

The theory was important to the study since the study sought to examine the moderating effect firm size on the relationship between distress factors and financial performance of deposit taking SACCOs.

Moderating Effect of Firm Size on Financial Distress and Financial Performance

In a study on the moderating role of firm size on the relationship between financial distress and earnings management, El-Rabat, Aldel-Fatah, and Mohamed (2023), examined sample of 101 Egyptian firms listed in the Egyptian stock Exchange. The data used in the study was for a period of six years from 2014 to 2019. Inferential analyses were conducted and the results of analysis found that there is a significant positive relationship between financial distress and earning management. Further, on the firm size as a moderator, the research found out that firm size moderates the relationship between financial distress and earning management, implying that firm size reduces the negative impact of Z-score on earning management.

Corvino, *et al.*, (2019) investigated the moderating influence of business size on relational capital and firm performance in Europe. Utilizing information gathered from 73 listed companies in France, Germany, Italy, and the UK, the study employed a unique disclosure index. Six regression models were used to examine the information gathered from 2011 to 2013 using content analysis. Analysis revealed that the association between RC and various factors related to company performance is moderated by firm size.

Muange and Kiptoo (2020), investigated the moderating influence of company size on the link between joint marketing alliances and firm performance of retail enterprises in Nairobi County. The 490 senior management officials employed by the 47 retail companies in Nairobi County, Kenya, were the study's target population. A sample of 216 was chosen through the use of stratified and random sampling procedures, explanatory research design was employed in order to ascertain the strength of the linear relationship between the variables, descriptive statistics along with correlation analysis was performed. The analysis's findings demonstrated that establishing joint marketing improves business success and that a larger business has a greater impact on that performance. The study came to the conclusion that the association between joint marketing alliance and business performance is moderated by firm size.

The moderating influence of business size on the link between financial leverage and financial performance of non-financial enterprises listed on the NSE in Kenya was studied by Wayongah and Mule (2019). Between 2012 and 2018, 47 non-financial enterprises listed on the NSE. The study employed a correlation research approach. The sample of 28 businesses was purposefully chosen. According to the findings of the correlation research, business size significantly predicts performance in the positive direction. Additionally, the analysis's findings indicated that the link between financial leverage and performance is adversely moderated by company size, with the model coefficient interaction term for (ROE) = -0.0368563 , ($p = 0.001$) and Tobin's Q, = -0.0368563 , ($p = 0.001$) being negative but significant. The study thus concluded that firm size moderates the relationship between financial leverage and financial performance.

Otwoko, Maina and Kwasira (2021) looked into how the size of DTS affects how interest rate drivers and financial success are related. Descriptive survey research was used in the study. We gathered secondary data from 2013 to 2017. Using the Krejcie and Morgan formula, data from 74 DTS, which were sampled from 176 DTS, were obtained. The results before and after moderation showed that the size of DT SACCOS mediated the association between the determinants of interest rates and the SACCOS' financial performance. Prior to moderation, the regression coefficients' mean was -0.105 ; during moderation, it rose to 0.512 . As a result, the DTS's size positively mitigated the link between interest rate drivers and financial performance. The study suggested that in order to improve the financial performance of deposit-taking SACCOS, DT SACCOS should take use of economies of scale that result from their size.

Victor (2019), sought to determine how business size affected the links between deposit-taking Saccos' lending performance and credit. The study used a hybrid research design that combined non-experimental and descriptive research methods. By December 2017, 175 DTSs licensed by SASRA were the target population. Targeting every Sacco that accepted deposits and was under SASRA regulation as of 2017, a census was conducted. The information came from certified financial statements that SASRA received for the five years between 2013 and 2017. According to the model, credit risks have a major impact on how well loans perform. The model revealed that the loan advance ratio and capital sufficiency coefficients were important. The results of the inferential study demonstrated a substantial correlation between loan performance and capital sufficiency. The natural logarithm of the total assets was used to measure the moderating variable, business size, which was likewise found to have a significant impact on loan performance but not to moderate the association between loan performance and credit risk. The study concluded that capital sufficiency has a major impact on the lending performance of deposit-taking Saccos in Kenya. The investigation also came to the conclusion that loan performance is highly influenced by the loan advance ratio (LAR).

Wayongah and Mule (2019) studied the impact of firm size on the link between financial leverage and financial performance for non-financial enterprises listed on the NSE in Kenya, finding that firm size moderates this relationship, with larger firms showing a negative influence on financial performance in the presence of high financial leverage. These studies collectively highlight the crucial role of firm size in shaping the relationships between different factors and financial performance.

Using yearly data from 2007 to 2017, Aduralere and Oyelade (2019) conducted a comparative analysis of a few businesses in Nigeria's building sector to assess the effect of company size on performance. Panel analysis was the study methodology employed. Total sales and age of the company from incorporation are two of the four factors used as an indication of size based on the financial evaluation of performance using return on assets (ROA) and return on equity (ROE). The age of the company since incorporation has a negative influence on return on assets, whereas total sales have a favorable impact. Furthermore, it was demonstrated that the sole factor that mattered for determining return on equity was leverage. The total sales and age of the firm since incorporation, two of the four variables used as a size indicator, were statistically significant in determining output per labor. Both of these variables have a positive impact on this metric, whereas the total employee count and leverage have a negative significant impact. This is based on a productivity analysis of the chosen enterprises' performance in Nigeria's building sector considering both outputs per laborer and output per capita. Only the age of the firm since incorporation was relevant in predicting output per capita and had a positive significant impact on production output per capita out of the four measurements of size and liquidity ratio. The mitigating role of company size in the association between the distress variables and financial performance among Kenya's DT-SACCOs was not examined in the research.

The effect of loans, business size, and bank capital ratio on the profitability of Jordanian commercial banks was studied by Shamki *et al.*, (2017) they used a panel of 13 commercial banks from 2006 to 2014. Contrary to what the theory suggested, a company's size did not significantly affect its profitability. Abel and Le Roux (2016) examined many variables (credit risk, liquidity risk, asset composition and management, expenditure management, and capital size) that impact a commercial bank's profitability using commercial banks in Zimbabwe from 2009 to 2014. Firm size was shown to be positively related with profitability, which is in line with what would have been anticipated theoretically.

Alipour, Sheikhi, and Agajani, (2019) aimed to determine how business size affected the relationship between capital structure and financial distress of Kenyan listed non-financial firms. The natural logarithm of total assets was used to calculate the size of the company, and total debt, long-term debt, and short-term debt financing were used to operationalize the capital structure. With reference to emerging markets, the Altman's Z-score index was used to gauge the extent of financial hardship. Between 2006 and 2015, secondary data on the 40 listed non-financial enterprises was gathered from audited and published financial statements. The Hausman test results confirmed that the study's estimation of the designated panel regression model for fixed effects was accurate. The findings of a feasible generalized least squares (FGLS) regression showed that the association between capital structure and financial distress of non-financial enterprises is significantly moderated by firm size. In particular, the study discovered that whereas debt often has a negative and significant impact on the investigated organizations' financial difficulties, as a firm grows in size, this influence changes to a positive and significant one. The study also discovered that while short-term debt is highly harmful, long-term debt utilization among large-scale businesses has a favorable and considerable impact.

Abbasi and Malik (2015) looked at the moderating effect of business size in the relationship between firm growth and financial success. In 2012, the data collection focused on 50 non-financial enterprises across different industries. The 2012 financial accounts of companies listed on the Karachi Stock Exchange provided secondary data. Regression analysis results support the alternative research hypothesis, which holds that firm size moderates the relationship between the dependent variable (firm performance) and independent variable (firm growth). The study concluded that business size moderates the relationship between performance and company expansion.

Vithessonthi and Tongurai (2015) conducted a study to determine the moderating effect of firm size on the relationship between leverage and operating performance of firms in Thailand. The study used panel regression data that covered the 2007–2009 global financial crisis era. The extent of the effect of leverage on operating performance is non-monotonic and dependent on company size, according to an analysis of data from 496,430 firm-year observations of a sample of 170,013 private enterprises. While the findings of panel regression reveal that leverage has a negative impact on performance across firm size subsamples, the results of year-by-year cross-sectional regression show that leverage has a positive impact on performance for small businesses and a negative impact on performance for big firms.

Shehzad, Haan, and Scholtens (2013) looked at the connection between the size, expansion, and profitability of commercial banks. For the years 1988 to 2010, they employed a panel of 15,000 commercial banks from 148 different nations. It used 31 commercial banks for the years 2000 to 2010. It was determined that there was no substantial positive relationship between profitability and size.

A study on the moderating effect of firm size on relational capital and performance in European firms was carried out by Corvino *et al.*, (2019) and revealed size-dependent relationships. Aduralere and Oyelade (2019) assess the impact of company size on the performance of Nigerian building sector businesses, finding significant size-related factors affecting financial performance. Abondo (2018) focuses on deposit-taking MFBs

in Kenya, concluding that the independent factors impacting commercial banks' profitability are influenced by firm size. The studies conducted by Shamki *et al.*, and Abel and Le Roux examine Jordanian and Zimbabwean banks, respectively, and find different relationships between size and profitability. Maja and Josipa (2017) affirm that firm size positively affects profitability, while Abbasi and Malik (2015) explore the moderating role of firm size in the link between growth and performance. Vithessonthi and Tongurai (2015) find the relationship between leverage and performance depends on company size. Lastly, Shehzad, Haan, and Scholtens (2013) consider the connection between size, expansion, and profitability in commercial banks across nations, finding no substantial positive relationship, while Sufian and Kamarudin (2012) report a positive influence of size on profitability in the context of commercial banks in Bangladesh. However, the research does not directly address the moderating role of firm size in connection with financial distress factors among deposit-taking SACCOs in Kenya.

3. Research Methodology

A correlation and longitudinal research design was utilized. The study collected secondary data from 2018 to 2022 from 176 licensed DT SACCOs in Kenya that are authorized to accept deposits and are registered with SASRA as of July 31, 2022. To ensure validity and reliability of the secondary data audited account given by the SASRA were used in the study. The data was cleaned and entered in STATA 15. A multiple regression model that regressed distress factors before and after moderating with firms' size on financial performance was adopted in analysis.

4. Results and Discussions

Financial distress factor comprised of liquidity, firm's leverage, operation efficiency, asset quality and capital sufficiency. In order to ascertain, the moderating effect of firm size, the study conducted a multiple regression model that regressed financial distress factors on financial performance as indicated in Table 1.

Table 1: Financial Distress and Financial Performance

Random-effects GLS regression	Number of obs	=	835
Group variable: Firm	Number of groups	=	167
R-sq:	Obs per group:		
within = 0.4415	min =		5
between = 0.4628	avg =		5.0
overall = 0.3969	max =		5
	Wald chi2(5)	=	595.67
corr(u_i, X) = 0 (assumed)	Prob > chi2	=	0.0000

FP	Coef.	Std. Err.	z	P> z	[95% Conf. Interval]	
LR	.0517804	.0191711	2.70	0.007	.0142058 .089355	
FL	-.0241616	.0030444	-7.94	0.000	-.0301284 -.0181947	
OE	.5771403	.0320587	18.00	0.000	.5143063 .6399743	
AA	-.5719342	.1032452	-5.54	0.000	-.7742911 -.3695772	
CA	-.1872781	.0489932	-3.82	0.000	-.283303 -.0912533	
_cons	.2126456	.0408845	5.20	0.000	.1325134 .2927778	
sigma_u	.08706137					
sigma_e	.08534404					
rho	.50996003	(fraction of variance due to u_i)				

The overall relationship between financial distress factors had financial performance of SACCOs in Kenya was examined using the multiple regression model. Liquidity (LR), financial leverage (FL), operation efficiency (OE), asset quality (AA) and capital sufficiency (CA) were appropriate predictors of financial distress that significantly predicted financial performance (Prob>chi²=0.000<0.05). A variation of 51.0% in financial performance across SACCOs in Kenya was associated with financial distress factors (Rho = 0.510). The summary multiple regression adopted was;

$$Y = 0.213 + 0.052X_1 - 0.024X_2 + 0.577X_3 - 0.572X_4 - 0.187X_5 + \varepsilon \dots\dots\dots(vi)$$

The summary model implies that a unit increase in liquidity (X_1) leads to 0.052-unit increase in financial performance. A unit increase in financial leverage (X_2) leads to a decrease of 0.024 unit in financial performance. A unit increase in financial operation efficiency (X_3) leads to 0.577 unit in increase in financial performance which was the highest financial distress factors. The same unit increase in asset quality (X_4) leads to a decrease of 0.572 unit in financial performance. This was the highest negative financial factor that had negative impact on financial performance. Finally, a unit increase in capital sufficiency (X_5) leads to a decrease of 0.187 unit in financial performance.

The second model of regression introduced the interaction between firm size and financial distress which represented the moderating effect of firm size on the relationship between financial distress and financial performance. This was presented in Table 2.

Table 2: Moderating Effect of Firm Size on Financial Distress and Financial Performance

Random-effects GLS regression	Number of obs	=	835
Group variable: Firm	Number of groups	=	167
R-sq:	Obs per group:		
within = 0.5733	min =		5
between = 0.3081	avg =		5.0
overall = 0.3991	max =		5
	Wald chi2(6)	=	907.44
corr(u_i, X) = 0 (assumed)	Prob > chi2	=	0.0000

FP	Coef.	Std. Err.	z	P> z	[95% Conf. Interval]	
LR	.3422659	.0279765	12.23	0.000	.2874329	.3970989
FL	-.156969	.0105195	-14.92	0.000	-.177587	-.1363511
OE	3.667813	.237644	15.43	0.000	3.20204	4.133587
AA	-3.438169	.2342627	-14.68	0.000	-3.897316	-2.979023
CA	-1.205969	.0871849	-13.83	0.000	-1.376848	-1.035089
c.DF#c.FS	-1.170458	.088712	-13.19	0.000	-1.34433	-.9965856
_cons	.1719895	.0368823	4.66	0.000	.0997015	.2442776
sigma_u	.08865065					
sigma_e	.07414797					
rho	.58838214	(fraction of variance due to u_i)				

The objective was to examine the moderating effect of firm size on the relationship between financial distress and financial performance. The model summary revealed that financial distress variables that is liquidity, financial leverage, operation efficiency, asset quality, capital sufficiency and the interaction between financial distress and firm size were appropriate predictors for financial performance ($\text{Prob} > \chi^2 = 0.000 < 0.05$). A variation of 58.8% in financial performance was related to financial distress as moderated by firm size as SACCOS.

The regression moderator model to be adopted is;

$$Y = 0.172 + 0.342X_1 - 0.157X_2 + 3.668X_3 - 3.438X_4 - 1.206X_5 - 1.170M * X + \varepsilon \dots \text{(vii)}$$

The results revealed that the interaction between distress factors (X) and firm size (M) was significant which implied that firm size significantly moderated the relationship between financial distress and financial performance ($\beta_6 = -1.170$, $P = 0.00 < 0.05$). The model indicate that firm size had moderating effect on the relationship between financial distress and financial performance of deposit taking SACCOS in Kenya.

H_01 : Firm size has no statistically significant moderating effect on the relationship between financial distress factors and financial performance of deposit taking SACCOS.

The objective finding revealed that the interaction between firm size and financial distress coefficient was significant since the p-value of 0.00 was less than 5% significant level ($\beta_6 = -1.170$, $P = 0.00 < 0.05$). This led

to rejection of null hypothesis and acceptance of alternative. This implied that firm size had statistically significant moderating effect on the relationship between financial distress factors and financial performance of deposit taking SACCOs.

El-Rabat, Aldel-Fatah, and Mohamed (2023) found that firm size moderated the relationship between financial distress and earnings management in Egyptian firms, mitigating the negative effects of financial distress. This concurs with the current study, supporting the idea that larger firms can influence the impact of financial distress, though the direction of moderation differs, with the current study finding a negative effect.

Corvino et al. (2019) investigated firm size's moderating influence on relational capital and performance in European firms, showing that firm size significantly moderates performance relationships, which aligns with the current study's emphasis on the importance of firm size as a moderator. However, their focus on relational capital rather than financial distress means their findings partially support the current results without directly addressing financial distress factors.

Muange and Kiptoo (2020) found that firm size moderates the relationship between joint marketing alliances and firm performance, with larger firms experiencing enhanced performance from such alliances. This aligns with the current study by highlighting the significant role of firm size in moderating performance outcomes, albeit in a different context.

Wayongah and Mule (2019) examined the moderating effect of firm size on the relationship between financial leverage and financial performance in Kenyan non-financial enterprises. They found that firm size negatively moderated this relationship, similar to the current study's findings that larger firms experienced a more pronounced negative impact from financial distress.

Otwoko, Maina, and Kwasira (2021) concluded that firm size positively moderates the relationship between interest rate determinants and financial performance in DTS, contrasting with the current study's negative moderation effect of firm size on financial distress factors. This suggests that the direction of moderation can vary depending on the specific financial variables involved.

Victor (2019) did not find firm size to significantly moderate the relationship between loan performance and credit risk in Kenyan DTS, which contradicts the current study's findings. This suggests that the moderating role of firm size may differ based on the specific performance metrics and contexts being analyzed.

Aduralere and Oyelade (2019) and Alipour, Sheikhi, and Agajani (2019) also investigated firm size as a moderating factor in financial performance relationships, finding varying impacts. Aduralere and Oyelade (2019) found positive and negative impacts depending on the performance measures used, while Alipour, Sheikhi, and Agajani (2019) found that firm size significantly moderated the relationship between capital structure and financial distress, similar to the current study.

Abbasi and Malik (2015) concluded that firm size moderates the relationship between firm growth and financial performance, aligning with the current study's findings by emphasizing the significant role of firm size as a moderator.

Vithessonthi and Tongurai (2015) found that the impact of leverage on performance depended on firm size, with larger firms experiencing a more negative impact, which aligns with the current study's finding of a negative moderating effect of firm size on financial distress factors.

Shehzad, Haan, and Scholtens (2013) and Sufian and Kamarudin (2012) found mixed results regarding the impact of firm size on profitability, with Shehzad et al. finding no substantial positive relationship and Sufian and Kamarudin finding a positive influence in the context of Bangladeshi commercial banks. These studies do not directly address the moderating role of firm size in connection with financial distress factors among deposit-taking SACCOs in Kenya, limiting their direct applicability to the current study.

Therefore, the current study's findings on the significant negative moderating effect of firm size on the relationship between financial distress factors and financial performance of deposit-taking SACCOs in Kenya are partially supported by the literature. While some studies align with the idea of firm size being a significant moderator, the direction and context of this moderation can vary, highlighting the complex role firm size plays in financial performance relationships.

The study's results indicating a statistically significant moderating effect of firm size on the relationship between financial distress factors and the financial performance of Deposit Taking SACCOs align well with Wrecker's financial distress theory. This theory posits that distressed enterprises tend to perform worse than financially stable ones, suggesting that stakeholders may derive private benefits from such turmoil. Larger SACCOs, with more substantial assets and resources, may have a greater capacity to absorb financial shocks and manage distress factors, aligning with the notion that distressed firms can navigate financial difficulties better when they have more substantial resources.

Furthermore, the larger scale might provide these SACCOs with better negotiating power, access to financial markets, and operational flexibility, thereby mitigating the negative impacts of financial distress and supporting the theory's assertion that stakeholders can benefit from such situations. The significant moderating

effect of firm size on financial performance underscores the importance of resource availability and scale in managing financial distress, resonating with Wrecker's theory that distressed entities can still function effectively and offer stakeholder benefits under certain conditions.

5. Conclusion and Recommendations

Summary

The study assessed firm size using the log of total assets and the sales to total assets ratio over a five-year period. The results indicated an increasing trend in total assets, demonstrating growth in firm size across the SACCOs in Kenya. The sales to total assets ratio remained relatively constant, with slight variations. The composite measure of firm size also showed an upward trend, reflecting overall growth in both assets and sales. The study's final objective was to examine the moderating effect of firm size on the relationship between financial distress and financial performance. The analysis revealed that financial distress variables, including liquidity, financial leverage, operation efficiency, asset quality, and capital sufficiency, were significant predictors of financial performance, with firm size significantly moderating this relationship. The interaction between financial distress factors and firm size was significant, indicating that firm size played a crucial role in influencing how financial distress affected financial performance in deposit-taking SACCOs in Kenya.

Conclusions

The study concluded revealed that firm size significantly moderated this relationship, suggesting that larger firms could better manage financial distress factors, thereby influencing their financial performance. The interaction between distress factors and firm size was significant, underscoring the importance of firm size in determining the financial resilience and performance of deposit-taking SACCOs in Kenya. Firm size, assessed using the log of total assets and the sales to total assets ratio, showed an increasing trend, indicating growth across the SACCOs. The study examined the moderating effect of firm size on the relationship between financial distress factors (liquidity, financial leverage, operational efficiency, asset quality, and capital sufficiency) and financial performance.

Recommendations

The significant moderating effect of firm size on the relationship between financial distress factors and financial performance suggests that larger SACCOs are better positioned to manage financial distress. The study recommends that SACCOs focus on growth strategies to increase their asset base and market share. Mergers and acquisitions could be considered to achieve economies of scale and enhance resilience against financial distress. Moreover, implementing comprehensive financial planning and management practices can help SACCOs of all sizes improve their capacity to manage distress factors and achieve better financial performance.

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