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The Mediating Effect of Firm Revenue on the Relationship Between Board Characteristics on Financial Distress of Deposit Taking Saccos in Nairobi County, Kenya

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Abstract

The upper Echelons Theory reiterates the importance of top management in an organization and recognizes that the managers make decisions that grow the entity. Before the establishment of this theory, the premise was that larger firms which drive high amounts of income, are capable of running themselves without failure. Although Organizations that command large amounts of income are deemed to be successful the upper echelons theory holds that these entities cannot be successful without proper management and guidance by top management where the board of directors in this case is considered as top management organ for SACCOs. Savings and Credit Cooperatives (SACCOs) require good governance to avoid the experience of financial distress. The current research was therefore aimed at establishing the influence of firm revenue on the relationship between board characteristics and financial distress of deposit taking SACCOs in Nairobi County. Large entities command more revenue as compared to small firms. Board Characteristics is of importance to this study because it influences Corporate Governance which according to previous research has shown that the practice helps revolutionize performance of various institutions. The study is guided by upper echelons theory which reiterates the importance of top management. Descriptive research design was adopted while Nairobi County was purposively chosen and a census was carried out on deposit taking SACCOs in the county. Secondary data was collected from SASRA using a data collection sheet and a panel data analysis performed using STATA software and findings were presented using tables. The study concluded that firm revenue does not mediate the relationship between board characteristics and financial distress of Deposit Taking SACCOs. Though firm revenue should be enhanced, governance should be improved since it remains a critical success factor in alleviation of financial distress.

Keywords: Financial Distress; Deposit taking SACCOs; Board Characteristics; firm revenue

JEL Classifications: D10; D14

Introduction

The SACCOs are financial institutions which are part of the cooperative movement of Kenya which can further be divided into two major categories or subdivisions. The deposit taking credit unions also known as savings and credit cooperative societies (SACCOs) and cooperatives which are not deposit taking dealing with produce marketing, provision of housing, transportation, investments and so on. It has been noted that recently, the credit cooperatives have experienced exponential growth as compared to other sectors of the economy. This invoked very close supervision prompting the formation of a regulatory authority to govern important monetary institutions. It is at this point that the SACCO Societies Regulatory Authority (SASRA) was formed. This body has established policies and frameworks that legally guides the registration, development and growth of these financial institutions. (Llorent-Martínez et al., 2012). This financial sector has SACCOs which are deposit taking and the others which are not deposit taking. SASRA is mandated to license and govern SACCOs which are deposit taking in nature while the ones which do not take deposits are monitored and guided by the cooperative department (SASRA, 2012).

SACCOs account for 63 per cent of the country's wealth (Wanjohi, 2016) which makes them very essential financial institutions for financial inclusion and wealth mobilization. Olando (2012) points out that SACCOs command an insignificant market share while Kiaritha (2015) cites political influence during decision making and an electoral system that is not transparent as some of the problems affecting the liquidity of SACCOs. This has pushed the SACCOs into severe liquidity problems making them incapable of satisfying the needs of their members. In Kenya financial distress is a sad reality owing to the fact that various institutions countrywide have experienced this unbearable and devastating state. Institutions in the financial sectors have also not gone without this nasty experience which has caused failure of some institutions in the sector which has impacted very negatively on the country's economic development in that it carries a spread of market disturbances which could lead to panic withdrawals, cash crunches as well as global financial crisis and economic suffering. The SACCOs which are not as regulated as the banks have higher chances of falling into financial distress which warrants more research which can guide into improving ways of managing SACCOs to deliver a strong financial industry which guarantees a stable economy for the country.

Literature Review

In Africa, amidst the colonial emphasis of particular activities upon co-operatives, the sturdy government regulation of SACCOs after colonization and the appropriation of cooperatives by neo-liberal reorganization, credit unions were revived and thrived even though unequally with their survival stemming from the desire and resolve of the members to soar through (Satgar, 2007).

The Co-operative Societies Act No. 12 of 1997 envisaged reducing regulation and instead promote the liberalization of co-operatives. While abusing office power, the managerial teams mismanaged the comparatives leading to misappropriation of resources and corruption in cooperatives which was also coupled with breaking up cooperatives which were large and productive into smaller units which were not efficient and dogged with serious financial problems. Makori (2013) in reiteration pointed to political interference being an obstacle to the performance of Kenyan credit unions.

Kiptoo, (2015) carried out an investigation in Eldama Ravine Sub County, Kenya and came to a conclusion that SACCOs have been with grave liquidity glitches with a majority incapable of satisfying client requirements for loaning and also savings withdrawal. According to Kirimi (2017), SACCOs are continuously facing liquidity problems due to high external financing hence the risk of financial distress and eminent closure. SACCOs account for 63 per cent of the country's wealth (Wanjohi, 2016) which makes them very essential financial institutions for financial inclusion and wealth mobilization. Olando (2012) points out that SACCOs command an insignificant market share while Kiaritha (2015) cites political influence during decision making and an electoral system that is not transparent as some of the problems affecting the liquidity of SACCOs. This has pushed the SACCOs into severe liquidity problems making them incapable of satisfying the needs of their members.

The revenue that a Firm is able to collect is very critical in determining how it relates to other firms within and outside its operating environment. According to Chundu (2014), the larger the revenue base of an entity, the grander the grip it has on its stakeholders, hence firms with more revenue will outperform those firms that are not able to collect much revenue which could be due poor innovations. Considering today's global economy, the ability to collect more revenue is crucial in that it enables a firm to enjoy the economies of

scale. Total revenue indicates the ability of a firm generate more income that can sustain it as a going concern. For SACCOs, the ability to generate more income is a good measure indicates the ability of a SACCO to sustain itself while being profitable and to withstand market adversities like competition.

The upper echelons theory being a management theory explains the relationship between organizational results and managerial characteristics. The upper echelons theory, which was initially introduced by Mason (2002), affirms that the cognitions, values, and perceptions of senior executives influence the strategy selection process, and as a result influences the firm performance. According to Krishnan and Park (1998), reorganization and restructuring are major approaches employed by various firms to achieve organizational goals in the 1990s. It is argued that a strong relationship exists between characteristics of upper echelons (top management team) and organizational strategies as well as achievement of an organization's objectives and its overall performance (Krishnan & Park, 1998). The upper echelons theory being a theory of management explains the relationship between organizational results and managerial characteristics. The upper echelons theory, as originally crafted by Mason (2002), holds that cognitions, values, and perceptions of management inspire strategic choices, which as a result influences the firm performance. According to Krishnan and Park (1998), reorganization and restructuring are major approaches employed by various firms to achieve organizational goals in the 1990s. It is argued that a strong relationship exists between characteristics of upper echelons (top management team) and organizational strategies as well as achievement of an organization's objectives and its overall performance (Krishnan & Park, 1998).

Upper echelons theory is founded on two principles namely the freedom of choice and the requirements of executives (Plöckinger et al., 2016). Management discretion can be explained as the possible range or leeway of action management is allowed in an organisation. It is the lack of restrictions and restrictions which could be from the environmental, the organisation itself or personal conditions and the accessibility of several reasonable options (Finkelstein, 1990). Managerial discretion denotes the autonomy of actions enjoyed by management while coming up with strategies and options (Hambrick & Finkelstein, 1987; Carpenter & Westphal, 2001); Crossland & Hambrick, 2011). Consequently, Hambrick (2007) posited that, when where freedom of choice by management is enhanced, management features would be reasonable forecasters of firm performance as opposed to when managerial discretion is low. Ongore (2008) argues that a board in which comprises individuals with the required explicit as well as common information of the primary goal of the entity, has enhanced capability ratifying decisions which have been made by management. It is also argued that to enhance efficient management a substantial proportion of proportion non-executive directors is essential.

Executive job demands on the other hand results from the hitches and constraints faced by executives' in their professional daily routines as they make strategic choices (Hiller & Hambrick, 2005). Specifically, job hassles maybe anticipated from work related constraints like inadequate firm resources, performance challenges such as expectations of owners and various stakeholders and the management ambitions such as individual yearning of delivering excellent results (Hambrick, 2007; Plöckinger et al., 2016; Tang & Ye, 2015). Hambrick (2007) suggested that directors experiencing a myriad of constraints may not have ample time to envision choices and as a result may take mental shortcuts and depend essentially on their individual experiences.

According to a study by Hambrick (2007), the upper echelons theory absolutely concentrated on the relationship between management characteristics and organizational strategic decisions. Plöckinger et al. (2016) points out that influence may be applied even in a situation where guidelines exist by methodically tracking conventional or by creative accounting or through adaptable management of earnings upwards every time that management deems it favorable to them. Financial reporting options of importance for firm's communication with stakeholders as this can be construed as part of the firms set of strategies practiced by upper echelons.

Various studies which support the upper Echelons Theory have been carried out and have consistently agreed with theory that the board can greatly influence organizational performance thus board characteristics should evaluated during selection of Board Members. Management generally applies substantial pressure on organizational resources thus acquiring the capacity of influencing the degree to which the level of earnings manipulation can be reduced. It is also the duty of executive directors to ensure that formulated internal control systems are implemented to satisfaction which reduces chances opportunism where some managers may take unfair advantage to enrich themselves., (Wahidahwati, 2018) carried out an investigation in aid to understand more clearly ways in which features of management teams impact the efficacy of an organization and came to a conclusion that organizational effectiveness is substantially influenced by board

characteristics. Similarly, CEO and TMT transformational leadership have been anticipated to impact organizational efficacy. Transformational leadership is perceived to be a channel connecting directors' character personalities to firm efficiency. The current study uniquely brings out how personality traits and leadership theories blend to foster a better understanding of how key character traits of directors impact an organization's efficacy.

According to Odhiambo (2011), there exists opportunities for mismanagement which include; insufficient commitment by stakeholders, insufficient clarity of roles and responsibilities by stakeholders, inadequate professionalism and discipline, inadequate internal management and operational system, bungled electoral processes and inadequate management committee education. Other causes of distress as pointed out by Makori et al. (2013) include non-distinction of clients' deposits from their shares, the over-reliance on provisional external borrowing, failure to adopt liquidity monitoring structures and approaches, excessive investment in non-earning assets, insufficient Information Communication Technologies (ICT) network, incompetent managerial capabilities and interference from the political class.

Studies carried out by Ooko et al., (2013), Orlando, (2012) and Kabaiya, (2012) have shown the presence of financial distress in SACCOs in Kenya and cited poor corporate governance as contributing to the distress experienced by SACCOs. This threatens the sustainability of these SACCOs as it makes them incapable of absorbing their operational losses instead transposing these losses upon the memberships' savings and share capital which leads to losses. However, Otieno et al (2015) is of a contrary opinion and argues that corporate Governance has does not influence the growth of SACCOs. Growth is also an aspect of performance. Due to this difficult situation faced by SACCOs, some of them have been shut by the regulator with some receiving instructions to operate conditionally.

The mediating effect of Firm Revenue on the relationship between board characteristics and financial Distress of SACCOs

Financial institutions generate increased portion of their income from non-intermediation activities (DeYoung & Rice, 2000) and this could be associated to financial liberalization policies. Deregulation and new technology have eroded banks' comparative advantages and made it easier for non-bank competitors to enter these markets, necessitating banks to shift their sales mix and diversify towards non-interest income sources (Adjaoud & Ben-Amar, 2010). Findings from USA studies show that in 1990's non-interest income grew rapidly to be a large part of banks operating profits. Noninterest income accounts for 43% of U.S.A commercial banks net operating income (Hirtle & Stiroh 2007). Financial liberalization of early 1990s in Kenya opened the banking industry to a number of players leading to stiff competition and weakening of financial performance of a number of commercial banks leading to collapse of some. In response, commercial banks have changed their behavior of income sources by diversifying as a possible way of improving performance. According to Mathuva (2016), savings and credit co-operatives should embrace revenue diversification to enhance their financial performance. This will ensure that they do not only rely on interest income but on other streams of income as well. This will improve liquidity ensuring that SACCOs are well equipped to meet their financial obligations without default and that they do not encounter financial distress.

Sathyamoorthi et al. (2016) corroborate the study by identifying the co-operative movement as a critical component of the country's socioeconomic development. Secondary financial data was collected from 9 operating SACCOs with audited financial statements over the 5-year observation period. The data collected was analyzed through the use of financial ratio analysis, correlation, common size, and regression analyses. The study reveals that in order for SACCOs to remain financially sustainable, management needs to ensure an optimal balance between interest paid on savings and interest charged on loans granted to members. It further recommends the investment of excess funds in diversified portfolios. This will reduce the SACCO's risk exposure and allow it to function efficiently, driving its profitability.

Chundu (2014) explored the determinants affecting the financial sustainability of SACCOs in Tanzania by the use of both a qualitative (interviewing management and staff) and quantitative (questionnaire that was statistically analyzed) data analysis. His study contributed to literature in Tanzania by identifying borrower frequency as the major challenge to SACCOs' financial sustainability, saying that SACCOs primarily exist to provide loans and, in the absence of a high frequency of loan requests, revenue received through interest charges and transaction fees is compromised. The study further advised that SACCOs needed to consider a higher margin and minimize costs in providing services in order to operate profitably and sustainably. He recommended that loan tenors offered by SACCOs be increased as findings concluded that short loan tenors

increased the event of credit default, which translated into the lack of sustainability for a number of SACCOs in the area.

The expansion in SACCOs and growth in membership has necessitated tapping into more stable revenue sources. For instance, SACCOs in Kenya have built building complexes, started investment companies and engaged in other non-interest income sources. To ensure safety of member funds and soundness in the SACCO sector, the regulations prohibit SACCOs from engaging in certain revenue generating activities such as foreign trade, trusts, land and transactions with non-members. This raises an interesting question as to whether the current interest and non-interest revenue sources permissible to SACCOs are capable of guaranteeing improved financial performance. Borda-Rodriguez and Vicar (2014) establish that one of the key determinants of a SACCO's survival is its ability to develop alternative sources of income, which seems limited by regulation in the case of Kenyan SACCOs. Ooko et al. (2013) imperatively, each SACCO needs to generate income which is adequate to cover all its operational costs, enhance the institutional capital, dividends and rebates. In this regard, financial practice is based on sound financial stewardship, solid capital structure, and prudent funds allocation strategy (Maina, 2009).

Shaheen and Malik (2012) termed firm revenue as the quantity and array of production capability and potential that an entity has or the magnitude and diversity of services a firm can provide to its customers simultaneously. The revenue that a Firm is able to collect is very critical in determining how it relates to other firms within and outside its operating environment. According to Chundu (2014), the larger the revenue base of a firm, the greater the grip it has on its stakeholders, hence firms with more revenue will outperform those firms that are not able to collect much revenue which could be due poor innovations. Considering today's global economy, the ability to collect more revenue is crucial in that it enables a firm to enjoy the economies of scale. Total revenue indicates the ability of a firm generate more income that can sustain it as a going concern. For SACCOs, the ability to generate more income is a good measure indicates the ability of a SACCO to sustain itself while being profitable and to withstand market adversities like competition.

According to Hirtle and Stiroh (2007), it is evident that the characteristics of various retail and corporate commercial banks affect the performance of these organizations differently. The retail commercial banks with transactions that are somewhat collect less revenue are faced with higher unit costs than the firms with the ability to collect more revenue. In the same manner, SACCOs with members who have higher incomes are deemed to be more efficient in comparison to SACCOs whose members have lower incomes.

Idrees and Qayyum (2018) perceived that the probability of an entity turning out to be financially distressed escalates with its ability to collect revenue. This is an indicator of the market share a firm commands. Conversely, Waqas and Md-Rus (2008) disclosed that smaller firms are not able to collect enough revenue hence being more susceptible to Financial Distress. Chancharat et al. (2012) by use of survival analysis techniques sampled 1,117 corporations operating from the year 1989 to 2005 and affirmed that firm revenue is significantly and positively related to financial performance. This means that firms with less revenue are more likely to experience financial distress. On the other hand, Ozkan (2001) established that small firms listed in the U.K. had a higher probability of experiencing financial distress and subsequent bankruptcy and liquidation as compared to larger firms due to their inability to collect enough revenue to meet their financial obligations. In affirmation, Shaheen and Malik (2012) avers that there exists a positive relationship between firm revenue and operating profit from a sample of 67 firms listed in Karachi Stock Exchange from year 2012 to 2016. This implies that Financial Distress is negatively related to firm revenue. In contrast, Wang and Shiu (2014) using data of firms listed in China Stock Market from year 1988 to 2016, concluding that Financial Distress can neither be inferred from firm revenue nor book to market value. A study carried out on commercial banks in Ethiopia from year 2002 to 2012, argues that firm revenue has no effect on the relationship between corporate governance and financial distress of commercial banks (Gebreslassie, 2015). While considering firm revenue as a mediator, Kannadhasan and Nandagopal (2009) inquired into the mediating effect of total sales revenue on the relation between business strategy and firm performance using Indian automotive firms. The study concluded that the interaction term firm revenue and business strategy had an insignificant effect on return on assets. The study reported significant effect on other variables used in the study. The study therefore established that firm revenue does not significantly mediate on all aspects of firm performance.

Gichaiya et al. (2019) carried out a study based on non-financial firms trading publicly in Kenya, with the firm size measured in form of total revenue as the mediator and came to a conclusion that firm revenue significantly mediates the relationship between risk and Financial Distress. Considering the studies as discussed above, there is mixed up information on the mediating effect on firm revenue and financial distress.

More so the studies have tried to concentrate on financial and non-financial firms' listed in the stock exchanges of various countries. This study therefore concentrated on establishing the relationship between board characteristics and financial distress of deposit taking SACCOs in Nairobi County. This motivated the current study which investigated the mediating effect of firm revenue on the relationship between board characteristics and financial distress of deposit taking SACCOs in Nairobi County as guided by the following objectives.

H0; Firm Revenue does not significantly mediate the relationship between board characteristics and financial distress of Deposit Taking SACCOs in Nairobi County.

H1; Firm revenue significantly mediates in the relationship between board characteristics and financial distress of Deposit Taking SACCOs in Nairobi County.

Research Methodology and Results

Descriptive longitudinal research design was considered appropriate and suitable for this study. A under this research design data is collected over a long period of time and an aspect observed iteratively. Secondary Data for the period from 2012 through 2018 time period was collected and analysed, for deposit taking SACCOs in Nairobi County thus making this research design a good asset for this study. 43 Savings and credit cooperatives were sampled from a population of 174 deposit taking SACCOs in Nairobi County, Kenya. Nairobi County was selected purposively and each SACCO from Nairobi County was included in the sample.

Descriptive data analysis was performed on collected data, to assist in creating a clear picture of the raw data collected. Precisely, the subsequent metrics on all variables were worked out: mean maximum, minimum, variance, standard deviation, skewness, and kurtosis. The mean specifies the average value of all recorded observations, while the maximum is an indicator of the highest recorded observation for each variable. Additionally, the minimum shows the least recorded observation for each variable. Variance and standard deviation are measures of dispersion which show the variability of the observations about the mean. Further, skewness indicates whether the observed values were conforming to a symmetrical distribution or were skewed, either positively or negatively. Finally, kurtosis indicates the level of peakedness of the observed values.

Table 1: Descriptive Statistics

	Mean	Maximum	Minimum	Variance	Standard Deviation	Skewness	Kurtosis
Financial Distress	1.870	6.644	-19.332	3.242	1.801	-5.553	7.659
Board Size	6.929	9.000	5.000	1.643	1.282	0.065	1.993
Board Composition	0.314	0.600	0.111	0.022	0.148	0.324	1.841
Board Independence	0.469	0.857	0.111	0.053	0.231	0.037	1.677
Board Average Level of Education	1.968	2.500	1.500	0.104	0.323	0.275	1.797
Board Tenure	5.570	15.783	1.009	12.013	3.466	1.011	3.360
Firm Revenue	19.407	22.484	15.512	1.598	1.264	0.013	3.537

From table 1, it is evident that the independent variable (Financial Distress, as measured using the Altman's Z score) had a mean of 1.87, which is quite low and thereby implies that on average, deposit taking SACCOs operating in Nairobi County is financially distressed. The maximum observation for the Altman's Z score is 6.644, while the least is -19.332. The dependent variable has a relatively low extent of variation since the variance is 3.242 and the standard deviation is 1.801. Additionally, it can be seen that this variable is negatively skewed (Skewness = -5.553), thereby implying that most of the observations were less than the mean. Further, the kurtosis is quite high (kurtosis = 7.659). This implies that majority of the observed values for Altman's Z score either coincided with the mean or was very close to the mean.

Correlation analysis was performed for better conceptualization of the inherent relationship between the study's independent, moderating, and intervening variables,. Another essence of this procedure was to

evaluate the strength of linear interrelationships between these variables, thereby precluding the problem of multicollinearity. Results of correlation analysis are as shown in table 2.

Table 2: Correlation Analysis

	Board Size	Board Composition	Board Independence	Board Average Level of Education	Board Tenure	Related Party Transactions	Firm Revenue
Board Size	1						
Board Composition	0.0527	1					
Board Independence	0.0835	-0.0713	1				
Board Average Level of Education	0.0559	0.0512	-0.0105	1			
Board Tenure	0.038	0.1317	0.0196	0.0527	1		
Related Party Transactions	0.2064	0.0644	0.0603	-0.0326	-0.104	1	
Firm Revenue	0.1298	0.0231	0.0425	0.0365	0.1345	-0.0619	1

As shown in table 2, all the indicators did not have any excessive levels of strong correlation. Thus, they can be jointly fitted as regressors in panel models. From the table, it is evident that board size has a positive correlation with other indicators of board characteristics as well as firm revenue and external borrowing. Board composition has a negative linear relationship with board independence and external borrowing, but a positive relationship with other indicators. Board independence has a negative relationship with the Board Average Level of Education but a positive relationship with all other variables. Further, Board Average Level of Education was found to have a negative correlation with Related Party Transactions but a positive relationship with the other variables. Firm revenue was observed to have a negative relationship with related party transactions but a positive relationship with all the other variables.

The third objective of the study was addressed in this part. The author applied the MacKinnon et al. (2007) three step approach to intervening influence of firm Revenue on the relationship between board structure and financial distress. In step one of testing the Intervening Effect of Firm Revenue, the relationship between the dependent variable and the independent variable (while ignoring the intervening variable) is established.

Table 3: Panel Regression Results for Step One of Testing the Intervening Effect
Prais-Winsten regression, heteroskedastic panels corrected standard errors

Group variable:	Saccoid		=	294	
		Number of obs	=	42	
Time variable:	Year		=	42	
		Number of groups	=	7	
Panels:	heteroskedastic (balanced)		=	7	
Autocorrelation:	panel-specific AR(1)	Obs per group: min	=	7	
		avg	=	7	
		max	=	7	
Estimated covariances =	42	R-squared	=	0.3666	
Estimated autocorrelations =	42		=	87.19	
Estimated coefficients =	6	Wald chi2(5)	=	0.0000	
		Prob>chi2	=	0.0000	
FD	Coef.	Het-corrected Std. Err.	z	P> z	[95% Conf. Interval]
BS	0.031	0.016	2.015	0.041	
BC	-2.443	1.111	-2.198	0.028	
BI	-0.103	0.047	-2.187	0.020	
BE	-0.553	0.069	-7.954	0.012	
BT	0.055	0.008	6.847	0.034	
_cons	5.377	0.385	13.984	0.005	

FD = Financial Distress, BS= Board Size, BC = Board Composition, BI = Board Independence, BE = Board Average Level of Education, BT = Board Tenure

From table 3, it can be seen that all indicators of the independent variable had a statistically significant effect on the dependent variable. Board size and board tenure has positive effects to financial distress while board composition, board independence and board education effects financial distress negatively.

Step two of testing the intervening effect of firm Revenue entailed estimating the relationship between the independent variable (Board Characteristics) and the Intervening Variable (Firm Revenue), while ignoring the dependent variable (Financial Distress). Panel regression analysis was conducted where each independent variable had a model in which it was the predictor of the intervening variable.

As per table 4, all variance inflation factors of the regressors were less than 10. As such, it was deduced that there was no multicollinearity in the model.

Table 4: Testing for Multicollinearity

Variable	VIF	Tolerance
Board Size	1.01	0.9857
Board Composition	1.03	0.9726
Board Independence	1.02	0.985
Board Average Level of Education	1.01	0.9909
Board Tenure	1.04	0.958
Mean VIF	1.02	

Table 4 shows that the Wooldridge test for autocorrelation indicated the presence of serial correlation in the model.

Table 5: Wooldridge Test for Autocorrelation

Wooldridge test for autocorrelation in panel data	
H0: no first-order autocorrelation	
F(1, 41) =	12.100
Prob> F =	0.0012

As per the output of the Likelihood ratio test for heteroscedasticity in table 5, there was presence of heteroscedasticity in the model.

Table 6: Likelihood-ratio test for Heteroscedasticity

Likelihood-ratio test	LR chi2(41)	=	345.19
(Assumption: nested in hetero)	Prob> chi2	=	0.0000

Owing to the fact that there was evidence of autocorrelation and heteroscedasticity on diagnostic testing, the empirical model was fitted using the Prais-Winsten Panel Regression model with Corrected Standard Errors approach. Results of fitting this model are shown in table 6.

Table 7: Panel Regression Results for Step Two of Testing the Intervening Effect

Prais-Winsten regression, heteroskedastic panels corrected standard errors				
Group variable:	saccoid		=	294
		Number of obs	=	42
Time variable:	year		=	42
		Number of groups	=	7
Panels:	heteroskedastic (balanced)	Obs per group: min	=	7
Autocorrelation:	panel-specific AR(1)	Avg	=	7
		Max	=	7
Estimated covariances =	42	R-squared	=	0.9850
Estimated autocorrelations =	42		=	1.80
Estimated coefficients =	6	Wald chi2(5)	=	0.8757
		Prob>chi2	=	0.8757
FS	Coef.	Het-corrected Std. Err.	z	P> z
BS	-0.026	0.048	-0.540	0.587
BC	-0.061	0.156	-0.390	0.694
BI	-0.016	0.091	-0.170	0.863
BE	-0.043	0.063	-0.690	0.490
BT	0.010	0.011	0.910	0.365
_cons	19.438	0.353	55.090	0.000

FS = Firm Revenue, BS= Board Size, BC = Board Composition, BI = Board Independence, BE = Board Average Level of Education, BT = Board Tenure

From table 7, all indicators of the independent variable do not have a significant effect on the intervening variable. Further, the overall model is also highly insignificant ($p = 0.8757$). Therefore, the MacKinnon et al. (2007) testing procedure for the intervening effect terminated at the second stage, and the intervening effect of firm revenue is deemed absent. Consequently, the study failed to reject the third null hypothesis that firm revenue does not significantly intervene in the relationship between board characteristics and financial distress of Deposit Taking SACCOs in Nairobi County.

Conclusion

Based on the study findings and discussion of the results, the study concludes that, firm revenue does not significantly mediate the relationship between board characteristics and financial distress of deposit taking SACCOs in Nairobi County. Board composition remains a critical factor in the financial soundness of credit unions in the view that firm revenue does not intervene in the relationship between board characteristics and financial distress experienced by such firms. Although SACCOs should diversify on their revenue sources, there is great need of looking into board characteristics since sound financial decisions will save them from falling into financial distress and facing eminent closure or withdrawal of operating licenses by the regulator.

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