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Firm Characteristics and Financial Distress among Manufacturing Firms Listed at Nairobi Securities Exchange.

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Businesses including companies listed on stock markets strive to predict financial distress to ensure they manage the factors that could potentially lead to such distress. It is however not clear how the various factors affect financial distress particularly firm size; firm activity levels; firm financial leverage; and profitability given that these are some of the biggest determinants of the financial condition of a business. The lack of clarity results from the fact that there are numerous models of financial distress with each providing varying factors some often contradicting each other. It is therefore critical to evaluate how these affects financial distress among manufacturing firms listed at Nairobi Security Exchange (NSE). This study aims to evaluate how firm size, turnover, leverage and profitability influence financial distress as measured by the B-Ratio. This census survey with a population of 13 companies covers the period 2013 to 2022. Three companies however did not meet the data criteria and were therefore excluded from the analysis. This left 100 firm-year observations. The study utilized four theories of financial distress that include neoclassical theory of investment; liquidity preference theory; pecking order theory; and Wreckers theory of financial distress. The study used panel regression analysis to test the hypotheses that firm size, turnover, leverage and profitability have no significant influence on financial distress. Hausman model specification test revealed that the fixed effects panel regression model was the most appropriate for analysis and it was subsequently used in arriving at the inferential findings. T-test and p-value at 95% confidence interval were used in hypotheses testing. All the four hypotheses set for the study were rejected and it was concluded that size, activity, leverage and financial performance are significant determinants of financial distress. The findings reveal that whereas firm size (as shown by firm capitalization ratio), firm activity level (as shown by total asset turnover) and firm profitability (as shown by return on equity) all had a negative effect on B-ratio, financial leverage had a direct positive effect on financial distress. The study was limited to the 10 qualifying companies at the NSE and has suggested that similar studies could be expanded to non-listed companies, listed nonmanufacturing companies as well as with the use of different models such as hazard models.

***Key Words*: Capitalization Ratio; Financial Distress; Leverage Profitability; Turnover.**

I.0 INTRODUCTION

1.1 Background of the Study

Financial distress can be defined as a situation in which an institution is having operational, managerial, financial and liquidity difficulties (Adeyemi, 2011). The value of any company reduces through the costs it undergoes during the period of distress. Mizan and Hossain (2014) opine that the financial health of a business firm is a major concern of its stakeholders. Listed companies worldwide continue to grapple with financial distress even as bourses and financial sector regulators continue to put in place deterrent regulatory measures to govern the sector.

Financial distress and business failure leads to heavy losses both financial and non-financial. It is therefore useful for business entities to predict business failures accurately and in a timely manner so as to take necessary preventive actions to avert financial distress (Byrne & Barron, 1993). Identifying and recognizing the early warning signs of financial distress provides the power to put in place strategic measures to avoid the impending financial distress. The most critical indicators of distress are found in financial statements, and

therefore it is critical to note that financial distress prediction models based on financial numbers are the most common measures of financial distress.

Recent studies (Amendola, Restaino & Sensini, 2015; Ikpesu, 2019; Jaafar et al., 2018; Zhang, Xie, Lu, & Zhang, 2016; among others) have shown that there is an increase in corporate failures globally today due to financial distress of business entities. It is imperative that such failures could have been averted at least partially by use of financial distress prediction models that would have provided early warnings signals to help put preventive measures in place.

According to Habib et al. (2020), there are various financial distress prediction models such as the multivariate discriminant analysis (MDA), logistical regression analysis (logit), probit analysis, genetic algorithms, and neutral networks all evolving from the pioneer studies of Beaver (1966) and Altman (1968). According to Habib et al. (2020, all these models can be categorized into two groups. These are specified as Univariate models and multivariate models. In univariate models, like those articulated under the pioneering work of Beaver (1966), a single factor is adequate to predict financial distress. In the multivariate case as articulated by Altman (1968), there are numerous factors that jointly cause financial distress and these need to be modeled into a multivariate model.

In Italy, Amendola, Restaino and Sensini (2015) investigated the influence of micro-economic indicators and firm idiosyncratic factors on the conditions of financial distress. They estimated a competing risks model after considering the distinctions among variables that lead to financial distress among firms leading to their market exit. The study uses a probabilistic model to establish the possibility of financial distress based on a number of factors for firms that had failed in Italy. The study uses hazard ratios for the variables that are identified as statistically significant. The scope of the study covers a period of 6 years that runs from 2004 to 2009 among firms that operate in the building sector in Italy. Their findings reveal that the determinants of financial distress among Italian firms are greatly dependent on the exit routes and suggest a multiple-state approach to predicting financial distress.

In Malaysia, Jaafar et al. (2018) sought to establish the factors that determine financial distress and business failure among firms listed at Bursa Malaysia, the Countries stock exchange. The scope of the study was focused on Practice Note 17 companies listed at Bursa Malaysia. Just like Ikpesu (2019), the study relied on the Altman (1968) Z-score in the measurement of financial distress among the focus firms. The study employed a census of the 18 firms that were listed at the category of Practice Note 17 firms. The time scope was eight years running from 2009 through 2016. Model specification tests settled on the fixed effects panel regression model. Secondary data was obtained from financial statements of the firms and the results revealed that leverage and firm profitability and the single moss greatest determinants of financial distress for the focus firms.

In the USA, Zhang et al. (2016) sought to establish the determinants of financial distress among large financial institutions using Holding companies of banks in that country. They use two proxies of financial distress. These are the Z-scores of Altman (1968) and the Distance-to-Default scores from financial statements. Using factor analysis, the findings reveal that non-performing loan ratio is the most important indicator of financial distress and that housing price index is also an important determinant of financial distress among the holding companies of the banks in the country.

In Indonesia, Kristanti, Rahayu and Huda (2016) sought to establish the determinants of financial distress among family-owned firms listed at the Indonesia Stock Exchange. Their independent variables resolved around corporate governance and financial conditions of these firms as indicated by financial ratios. The time scope of the study covered 6 years running from 2008 to 2013 and the study model was logistic regression. In their findings, Kristanti, Rahayu and Huda (2016) show that there is a positive correlation between strong corporate governance and the avoidance of financial distress by the focus firms.

In Nigeria, Ikpesu (2019) sought to establish the firm idiosyncratic determinants of financial distress using manufacturing companies in that country. The study relied on a fully modified ordinary least squares model (FMOLS) on a time series approach. The study relied of listed manufacturing firms at the Nigeria Stock Exchange with a census of 18 of these firms. Secondary data derived from published financial statements was utilized in the study. The dependent variable which is financial distress was measured using the Altman (1968) Z-score. The independent variables pursued in the study were firm size, firm liquidity, firm profitability and firm leverage. These are similar to the variables used in the current study. The findings indicate that there is a positive causality of leverage, liquidity, firm size and profitability of financial distress.

In Ethiopia, Ufo, No and Sodo (2015) sought to evaluate the determinants of financial distress. This was focused among manufacturing firms in that country. The scope of the study focused on a stud time period of 7 years that included 1999 to 2005. The panel data model specification tests favoured the use of Generalized Least Squares (GLS) regression analysis. They study used debt service coverage as a proxy for financial distress and hypothesizes that liquidity, profitability, efficiency and leverage all have no significant effect on debt service coverage. Using t-statistic a 95% confidence interval, the findings reveal that liquidity, efficiency and profitability positively affects debt service coverage. The study similarly rejects the null hypothesis for leverage but with the finding that leverage bears a negative association with debt service coverage.

In the Financial sector in Kenya, Jepkorir, Muturi and Ndegwa (2019) sought to find out if liquidity management is a determinant of financial distress. The focused on the Savings and Credit Cooperative Societies (SACCOs) in Kenya. The time focus of the study was seven years running from 2008 to 2014 while the purposive sample used in the study totaled to 30 SACCOs. Panel data analysis was used and the Hausman model specification test settled on the fixed effects model as the most appropriate for testing the hypothesis that liquidity has no significant effect on financial distress facing SACCOS in Kenya. The null hypothesis was rejected with the finding that liquidity management is negatively associated with financial distress.

Mburu (2018) had a study away from financial firms in Kenya and sought to find out the determinants of financial distress among non-financial firms that publicly trade at the Nairobi Securities Exchange. The independent variables that represented the determinants of financial distress were profitability, activity, liquidity and firm size. The dependent variable was indicated by the Altman (1968) Z-score. Using secondary data on 10 firms that were chosen for the study, data was collected from seven segments of the NSE. These were the Automobile sector; the Construction and Allied segment; the Agricultural firms; the Telecommunication firms; the Commercial and Services segment; the Energy and Petroleum sector as well as the Manufacturing and Allied sector. The time focus of the study was 5 years running from 2013 to 2017. Regression analysis showed that profitability and firm size were significant determinants of financial distress.

Statement of the Problem

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Businesses including companies listed on stock markets strive to ensure they avoid financial distress by managing the factors that could potentially lead to financial distress. It is however not clear how the various factors affect financial distress particularly firm size, asset turnover, leverage and profitability given that these are some of the biggest determinants of the financial condition of a business. The lack of clarity results from the fact that there are numerous models of financial distress with each providing varying factors some often contradicting each other. It is therefore critical to evaluate how these affects financial distress among manufacturing firms listed at Nairobi Security Exchange (NSE). This is because they affect various sectors of the economy hence the need to ensure they avoid financial distress and its negative consequences to the economies in general and the companies in particular.

Studies on financial distress in Kenya have focused on Local Authorities (Ntoiti, 2013; Ouma, 2011), insurance companies (Kosikoh, 2014) and non-financial firms (Muigai, 2016) and causes of financial distress (Memba & Abuga, 2013). Studies on listed manufacturing firms largely focused on macro factors. The related studies on the financial distress in the context of listed manufacturing firms were based on data from other countries and their findings may not be applied to the local county context. On the other hand, local studies failed to show the extent to which firm's characteristics affect financial distress of listed manufacturing firms at Nairobi Securities Exchange. This study therefore seeks to bridge this research gap by ascertaining the effect of firm size, asset turnover, leverage and profitability on financial distress of listed manufacturing firms at Nairobi Securities Exchange. This culminates into four specific research objectives identified as:

Research Objectives of the Study

i. To examine the effect of firm size on the financial distress of listed manufacturing firms at Nairobi Securities Exchange.
ii. To establish the effect of asset turnover on the financial distress of listed manufacturing firms at Nairobi Securities Exchange.
iii. To determine the financial leverage of the firm on the financial distress of listed manufacturing firms at Nairobi Securities Exchange.
iv. To examine the profitability of the firm on the financial distress of listed manufacturing firms at Nairobi Securities Exchange.

Methodology

Rooted in empiricism, this study adopted quantitative causal research design. Creswell (2003) observed that the aim of quantitative research design is to give explanations of quantitative results and due to the nature of the present study; this design was deemed to be the most suitable. The study was more on the quantitative data for both the independent variables (turnover, size, leverage and profitability) and the dependent variable (financial distress as indicated by the B-ratio).

The target population for this study were all 13 manufacturing companies that are listed on the Nairobi Securities Exchange over 10 years between the years 2013-2022. Three of them did not meet the data criteria for the study. This left a panel of 10 companies studied over the 10-year period which provided 100 firm year observations.

The study used secondary data in empirical analysis. Firm size, the first independent variable of the study was measured using capitalization ratio specified as the ratio of a firm's capitalization at year end to the industry capitalization at the Nairobi Securities Exchange for the manufacturing companies' segment of the market. The second independent variable, asset turnover was in line with Altman (1968) taken as the ratio of

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annual sales to total assets .The third independent variable, financial leverage, indicates the extent to which a firm is geared by relying on long term debt to finance its assets and operations. In this study, leverage is measured on the basis of long-term debt as a ratio of total long-term capital. The final independent variable, firm profitability, is indicated as a balance sheet profitability ratio called Return on Equity (ROE). The dependent variable of the study is also measured on the basis of secondary data in line with the B-ratio. The B-ratio shows financial distress levels by comparing cash flows originating from operations (CFO) to the total assets of a business.

The study used panel regression model detailing the variables for each of the 10 qualifying manufacturing companies listed at the NSE for the ten-year period of the study running from 2013 to 2022.

$$Y_{i,t} = \beta_0 + \beta_1 X_{1\,i,t} + \beta_2 X_{2\,i,t} + \beta_3 X_{3\,i,t} + \beta_4 X_{4\,i,t} + e_{i,t}$$

The variables in the model and their measurements are specified as:

$$Y_{i,t} = Finacial\ Distress$$

$$X_{1\,i,t} = Firm\ Size = Capitalization\ Ratio = \frac{Firm\ Capitalization}{Total\ Industry\ Capitalization}$$

$$X_{2\,i,t} = Firm\ Turnver = Total\ Assets\ Turnover = \frac{Sales}{Total\ Assets}$$

$$X_{3\,i,t} = Firm\ Levarage = Leverage\ Ratio = \frac{Long\ Term\ Debt}{Total\ Long\ Term\ Finance}$$

$$X_{4\,i,t} = Firm\ Profitability = ROE = \frac{Earnings\ after\ Tax}{Shareholders'\ Equity}$$

The descriptive statistics that were used in the study relate to measures of central tendency, the measures of central tendency and measures of distribution. With respect to central tendency, mean and median were used to describe the variables of the study. When it comes to central tendency, standard deviation and variance were used in describing the variables of the study. With respect to distribution, Kurtosis and Skewness were used to test the levels of peaked-ness and outliers. To relate measures of central tendency to the measures of distribution, coefficient of variation (CV) was used as an indicator of relative variation in the data.

The hypotheses state that firm size; turnover; leverage and profitability have no significant influence on financial distress of manufacturing firms listed at NSE. To test these hypotheses, the t-statistic at 95% confidence interval was used. The corresponding p-value was also used at 0.05 level of significance with the hypotheses rejected if t-value is greater than the critical value and if p-value is less than the level of significance (Charles, & Benson 2023)..

Findings and Discussion

A composite measure that relates central tendency and dispersion descrptive statistics is used in this study. This is the Coefficient of Variation (CV). In essence, CV shows the relative standard deviation (variability) with respect to every unit change in mean (central tendency measure). The higher the CV, the heaver the levels of variability relative to central tendency and vice versa (Black, 2023). The findings from the study are indicated in Table 1.

Table I: Descriptive Statistical Findings

Statistic	*BR*	*CR*	*TR*	*LR*	*ROE*

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Mean	0.095179	0.093142	0.864832	0.292033	0.199755
Median	0.060321	0.040623	0.676592	0.160353	0.117551
Sample Variance	0.019525	0.015552	0.379932	0.082115	0.165381
Standard Deviation	0.139732	0.124709	0.616386	0.286556	0.406671
Coefficient of Variation	1.46809	1.338912	0.712723	0.981248	2.035845
CV Rank	2	3	5	4	1
Count	100	100	100	100	100

Based on this analysis, the rank in relative variability as indicated by CV is ROE (rank 1); BR (rank 2); CR (rank 3); LR (rank 4) and TR (rank 5). The implication of this is that profitability has the most volatile variation among the manufacturing companies listed at the NSE. Profitability emerges as the most volatile parameter of financial distress. This is expected for a manufacturing sector that have companies coming from various sectors of the economy. Some are very profitable while others are barely surviving. Financial distress is the second most volatile variable as indicated in Table I and as measured by the coefficient of variation. This could be because the cash flows from operations are also volatile given the variations in the types of companies that are listed as manufacturing companies at the NSE. CV indicates from Table I that asset turnover is the least volatile variable among manufacturing companies listed at the NSE. This could be because these are mature companies that have achieved sales stability. This conclusion is in line with Al Sawalqa (2021) who concludes that mature companies are expected to have stable asset turnover ratios given the product and company life cycles.

For clear analysis, it is required that the variables under study be as stable as possible. In this regard, analysis of variances (ANOVA) of the variables was undertaken for the ten-year study period to check if they remained stable over that duration. This involved computing the time series ANOVA and checking its statistical significance at 95% confidence interval. In line with Black (2023), the values are significantly different if the ANOVA F value is greater than the critical F-value. Otherwise, the variables are relatively stable over the time period. The statistical findings are shown in Table II.

Table II: Time Series Variable Stability ANOVA

Variable	*SS*	*MS*	*F*	*P-value*	*F crit*
B-Ratio	0.061375	0.006819	0.327929	0.963676	1.985595
Capitalization Ratio	0.110203	0.012245	0.770937	0.643393	1.985595
Asset Turnover Ratio	0.466723	0.051858	0.125644	0.998946	1.985595
Leverage Ratio	0.051857	0.005762	0.064200	0.999935	1.985595
Return on Equity	1.031623	0.114625	0.672457	0.731722	1.985595

The analysis was done at 95% confidence interval and there the level of significance for the F-values is 0.05. Since it is one variable under consideration, the degrees of freedom are identified as 100 observations less one variable which provides 99 degrees of freedom. The between groups variation varies over the ten companies while the within group variation is hinged on the 100 firm year observations.

The ANOVA values indicate that the computed F for all the variables was less than the critical F of 0.985595. In all cases, the p-value is greater than the significance value of 0.05 at the 95% confidence interval. the study period for the subject companies are not significantly different over time is thus not rejected. The implication as exemplified by Black (2023) with respect to ANOVA is the variables were stable

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over the 10-year study period and can therefore be relied upon for further analysis in the panel regression analysis.

At the initial stage of inferential analysis, correlation evaluation of the interrelationship among the variables was undertaken. Black (2023) indicates that using Pearson's coefficient of correlation, the level of association among variables varies from -1 for perfect negative correlation to +1 for perfect positive correlation. Before the multiple panel regression analysis was undertaken, multiple correlation analysis was undertaken to check the strength of association between BR, the dependent variable and the four independent variables. The findings of the association among the study variables using Pearson's coefficient of correlation are indicated in Table III.

Table III: Correlation Matrix

ROE	**LR**	**TR**	**CR**	**BR**	
1.0000	-0.3270	-0.1479	-0.1786	-0.3829	**ROE**
	1.0000	0.1721	0.0993	0.0179	**LR**
		1.0000	-0.0247	-0.4795	**TR**
			1.0000	-0.1695	**CR**
				1.0000	**BR**

Correlation indicates the degree of association among two or more variables in a phenomenon (Black, 2023). In this study, the dependent variable is financial distress as indicated by the Beaver ratio while the independent variables are firm size, assets turnover, leverage and profitability as shown by capitalization ratio, turnover ratio, leverage ratio and return on equity respectively. A correlation among all these variables has findings that are in Table III. In line with Black (2023) weak correlation is noted when the Pearson coefficient of correlation is close to zero on either side of zero. In this respect, it is noted that all the independent variables, with the exception of leverage, have a negative correlation with financial distress (Thomas, Nyangau, & Charles, 2023).

The findings in table III indicate that ROE and Asset Turnover have a moderate negative correlation with financial distress as indicated by B-ratio. This indicates that the higher the turnover and profitability, the lower the chance of financial distress. Whereas this is intuitively true, it contradicts with Altman (1968) 5-variable score model which showed that asset turnover and profitability are positively correlated with the probability of financial distress. This could be because Z-score in Altman (1968) isa classification model as opposed to BR which is a continuous variable model. The findings are however comparable to those of Nurhayati, Mufidah and Kholidah (2017) who reported that return on assets (an indicator of financial performance) is negatively related with financial distress as computed through logistic regression.

The findings in table III also indicate that leverage ratio and capitalization ratio have a weak positive correlation with financial distress. The coefficient of correlation of BR and LR is 0.2179 while that of between BR and CR is -0.1695. This indicates that leverage and size have a weak correlation with financial distress and that separately the high leverage and size, they may have minimum effect on financial distress. Jointly, the degree of association could improve. The findings are in line with those of Nurhayati (2017) who showed that assets an indicator of size, had a positive effect on financial distress. They also in line with the Altman (1968) Z score model that has leverage positively impacting financial distress.

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Bankruptcy ratio and ROE have a moderate negative correlation as measured by Pearson's coefficient of correlation. This provided a value of -0.3829. The other value with a semi-strong negative correlation is turnover ratio with a coefficient of correlation of -0.48. The remaining two values have weak positive correlation for leverage and low negative correlation for firm size.

In relation to the hypotheses testing, four hypotheses were presented in this study. They were that firm size, firm asset turnover, firm financial leverage and financial performance jointly have no significant influence on financial distress as indicated by the B-ratio. The findings are presented in Table IV.

Table IV: Panel Regression Output of BR on Financial Distress Indicators

*Fixed-***effects** *Included* ***10*** *cross-sectional units Time-series length =* ***10*** *(****10****0 Observations) Dependent variable:* ***BR***

	Coefficient	*Std. Error*	*t-ratio*	*p-value*	
Const	-0.0365404	0.0162597	-2.247	0.02694	**
CR	-0.1132740	0.0552305	-2.051	0.04303	**
TR	-0.0913792	0.0178677	-5.114	<0.00001	***
LR	0.0781347	0.0099125	7.882	<0.00001	***
ROE	-0.0668994	0.0233896	-2.860	0.00521	***

The first null hypothesis of the study was that firm size has no significant influence on financial distress of manufacturing firms listed at the Nairobi Securities Exchange. The findings in Table IV reveal that the regression t-value for the capitalization ratio coefficient of -0.11327 is -2.051. This is higher than the critical value. Accordingly, the null hypothesis is rejected and it is concluded that firm size a negative effect on financial distress and that the higher the capitalization ratio, the lower the value of the B-ratio that indicates financial distress and vice versa. This is confirmed by the p-value of 0.04303 with a two-star rating that indicates that the effect is not very strong. This is the reason 0.043 is still less than the significant value of 0.05 although very close to it.

The findings are in agreement with those of Wangsih et al. (2021) who showed that in Indonesia, firm size had a negative effect on financial distress for retail companies quoted at the Indonesia Stock Exchange. The similarity could be associated with all these companies under the focus of the studies being large companies that are listed on their respective stock markets. While Wangsih et al. (2021) used retail companies, the current study is based on manufacturing companies. The findings are also in agreement with those of Runis et al. (2021) who had reported in their study of the real estate companies that financial distress and firm size are negatively related. In Nigeria, Ikpesu (2019) had revealed that firm size is a positive predictor of financial distress among companies listed at the Nigerian Stock Exchange. The seeming contradiction with the Nigerian study seems to stem from the differences in the measures used to evaluate financial distress. Whereas the current study relies on the B-Ratio which is a continuous variable, the Ikpesu (2019) study used the Altman Z-score which is essentially a discriminant measure that separates financially distressed firms from the non-distressed ones.

The second null hypothesis of this study was that firm activity levels as indicated by total asset turnover ratio (TR) has no significant influence on financial distress of manufacturing firms listed at the Nairobi Securities Exchange. The findings in Table IV reveal that the regression p-value for the asset turnover ratio is less than 0.00001. This corresponds to the coefficient of -0.09138. The p-value is therefore clearly less than the critical

vale at 95% confidence interval of 0.05. The implication is that the coefficient of TR is statistically significant and strongly so given a star rating of 3 stars.

Accordingly, the null hypothesis is rejected and it is concluded that firm activity levels have a negative effect on financial distress and that the higher the asset turnover ratio, the lower the value of the B-ratio that indicates financial distress and vice versa. This is confirmed by the t-value which is indicated in table 4.13 as -5.114. The findings contradict those of Wangsih et al. (2021) who showed that in Indonesia, firm sales growth, the indicator of firm activity levels, had no significant effect on financial distress for retail companies quoted at the Indonesia Stock Exchange. The variation could however be associated with the different companies under the focus of the studies. While Wangsih et al. (2021) used retail companies, the current study is based on manufacturing companies.

The third hypothesis of the study sought to evaluate if financial leverage had any influence on financial distress. From the findings, the t value for the leverage coefficient is 7.882. This is higher than the critical t at 95% confidence interval. It is from this that the null hypothesis is rejected with the conclusion that financial leverage positively influences financial distress and that the higher the level of leverage, the greater the possibility of financial distress for manufacturing firms listed at the NSE.

The findings are in agreement with those of Wangsih et al. (2021) who also found that for retail companies listed at the Indonesian Stock Exchange, leverage had a positive effect on financial distress. This could be attributable to the fact that highly levered companies are likely to have a higher risk of defaulting on the debt principal and interest repayments. Just like the findings from this study, Runis et al. (2021) had reported in their study of the real estate companies that financial distress and financial leverage are negatively related.

Also with contradictory findings is Ikpesu (2019) who using companies listed at the Nigeria stock Exchange found out that leverage was positively associated with financial distress. The difference with the current findings could be stemming from the fact that whereas in this study the B-ratio is used as the indicator of financial distress, in Ikpesu (2019), the Altman Z-score was used. Whereas the B-ratio isa continuous variable, the Z-score is essentially a multiple linear discriminant index that categorizes firms into either the failed or non-failed firms.

While evaluating Commercial banks in Kenya, Sporta (2018) had established that leverage had a significant influence on financial distress. This means that the results from the banking sector in Kenya with respect to financial distress prediction can be compared to the findings coming from the manufacturing segment of the country.

The last objective of the study was to evaluate the effect of financial performance on financial distress of manufacturing companies listed at the Nairobi Securities Exchange. The related hypothesis was that financial performance as measured by return on equity (ROE) had no significant influence on the financial distress of these companies over the ten-year study period ending at December 2022. The findings in Table IV reveal that the output t-value of 0.00521 is less than the critical value of 0.05 which indicates that the null hypothesis is rejected and the conclusion arrived at that financial performance has a negative effect on financial distress and that the higher the ROE, the lower the chances of financial distress. This could be possibly because better financial performance reduces the possibility of have a squeezed liquidity position. The conclusion of the negative association between financial distress and financial performance is arrived at

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when the t-value is used given that the t-value of -2.860 is statistically significant at the 95% confidence interval.

The findings at the NSE are in agreement with those of Runis et al. (2021) who using real estate firms showed that financial performance is a negative predictor of financial distress. The findings from this study contradict those of Ikpesu (2019) who using companies listed at the Nigeria stock Exchange found out that profitability was positively associated with financial distress. The difference with the current findings could be stemming from the fact that whereas in this study the B-ratio is used as the indicator of financial distress, in Ikpesu (2019), the Altman Z-score was used. Whereas the B-ratio isa continuous variable, the Z-score is essentially a multiple linear discriminant index that categorizes firms into either the failed or non-failed firms.

Conclusion

The conclusion arrived at from this study are based on the statistical findings from the data analysis. Firstly, it is concluded that firm size as based on market capitalization ratio is a negative determinant of financial distress. The larger a manufacturing firm is, the less likely that is to face financial distress. Accordingly, firm size especially for the listed firms at the NSE helps predict financial distress.

Secondly, it is concluded that the activity levels of a firm are a negative predictor of financial distress. There is an inverse relationship between financial distress status of a firm and the level of activity as indicated by total asset turnover ratio. In this vein, active firms that efficiently and effectively utilize their total assets to generate income and reduce costs are less likely to face financial distress than the ones have a lot of wasted excess capacity with unutilized assets at their disposal.

Thirdly, financial leverage is a great risk indicator of financial distress for manufacturing firms listed at the NSE. This is because the finding reveals that there is a positive relationship between financial distress and financial leverage. It is therefore concluded that manufacturing firms that wish to reduce the likelihood of financial distress must be judicious in their usage of long-term debt in financing their operations.

The other conclusion drawn from the findings of the study is that financial performance especially from the equity point of view is critical in determining whether a firm would face financial distress or not. Profitability in general and return on equity in particular is a negative predictor of financial distress. This implies that the higher the profitability of a firm, the lower the chances of financial distress.

The last conclusion that can be drawn from the study is that manufacturing firms listed at the NSE are risk averse. Descriptive findings showed that leverage is the least volatile indicator of financial distress This is an indication that the firms have less reliance on long term debt in financing their capital structures and rely more on internally generated funds. They could be assumed to be following the postulations of the Pecking order theory where managers only resort to more expensive external finance once the internal sources are exhausted.

Some recommendations are provided based on the limitations of this study. The study was limited on several fronts and it is on the basis of those limitations that recommendations for further study are suggested. Firstly, the study focused on listed manufacturing firms at the NSE and therefore the findings and conclusions may not equally apply to other firms like unlisted manufacturing firms. It is therefore suggested that another study

be undertaken to establish the determinants of financial distress among non-listed manufacturing firms. Since such firms do not trade on the stock market, a different indicate of size such as total assets could be used in place of the market capitalization ratio.

In addition, the current study focused only on manufacturing firms which ended up limiting the sample to only 10 firms over ten years. It accordingly may be difficult to generalize the findings to non-manufacturing firms listed at the NSE such as insurance companies, service companies and investment companies. It is therefore suggested that a similar study be carried out on non-manufacturing firms at the NSE for comparative findings.

The dependent variable used in this study was the B-ratio. It assumed that financial distress is a continuous variable. May be useful to carry out a similar study using a different model like logistic regression when financial distress is taken as a binary variable (distressed versus non-distressed) or a probabilistic model like hazard model which financial distress is analyzed based on the probability of financial distress and failure.

Lastly, the current study was based on only 4 independent variables that are financial in nature i.e., firm size activity levels, leverage and profitability. A different study can be carried using a different set of variables or additional variables like liquidity and cost ratios. This could help increase the predictive power of the resultant model given that the panel regression R-square value was 0.456 thereby failing to explain 54.4 % of the determinants of financial distress.

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