FINANCIAL DISTRESS PREDICTION IN MICRO, SMALL AND MEDIUM ENTERPRISES: A case study of youth owned businesses in Kampala Uganda

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DECLARATION

I BUKENYA TTENDO VANESSA hereby declare that this is my original work, is not plagiarized and has never been submitted to any other institution for any award.

Signature: _____ Date: 19th, September, 2023.

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APPROVAL

This dissertation compiled and written by Bukenya Ttendo Vanessa has been supervised and approved by me and is therefore ready for submission to the School of Business, Uganda Christian University.

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Contents

ABBREVIATIONS

MoFPED	Ministry of Finance Planning and Economic Development
UMA	Uganda Manufacturers Association
SME	Small Medium Enterprises

MSME	Micro Small Medium Enterprises
GDP	Gross Domestic Product
USSIA	Uganda Small Scale Industries Association
WTO	World Trade Organization
UNCTAD	United Nations Conference on Trade and Development
URSB	Uganda Registration Services Bureau.
BOU	Bank Of Uganda
UIA	Uganda Investment Authority.
LTD	Limited

ABSTRACT

Financial distress in small and medium enterprises (SMEs) is a common phenomenon in the world today and thus attract the interests of we the scholars, government and policymakers. In corporate finance, the phrase "financial distress" is frequently used to describe any circumstance in which a person or business finds it difficult to meet their financial obligations, particularly loan payments to creditors. Small and medium-sized businesses in Uganda encounter a variety of obstacles that have an impact on their profitability and cause them to experience financial hardship. The SMEs are highly

contributing to national economic development through enhancing entrepreneurship and creating employment for the youth. Consequently, SMEs increase invention and creativity, which in turn increases market competition (Jahur & Quadir, 2012). This research project seeks to find the causes of financial distress on MSEs which will enable them to avoid financial distress, curb its effects to ensure continuous and sustainable growth.

CHAPTER ONE

1.0 INTRODUTION.

The study focused on financial distress prediction in micro, small and medium enterprises as the case study is on youth owned/led businesses in Kampala Uganda. The chapter outlays the background of the study, statement of the problem, purpose of the study, objectives, research questions and scope of the study, significance of the study, conceptual framework and conclusion

1.1Background.

The term financial distress is commonly used in corporate finance that describes any situation where an individual or company's financial condition leaves them struggling to pay their bills especially loan payments due to creditors. In Uganda, small and medium enterprises face numerous challenges that affect their profitability thus leading to financial distress. There are numerous potential causes of financial distress and some of them are beyond the control of the individual or companies that end up suffering financial problems and these may include, a weak legal and regulatory framework, limited access to finance, corruption and market competitiveness. The common remedies used by MSMEs in Uganda include; cutting costs, improving revenues or cash flows and restructuring the existing debts. The Micro, Small, Medium, Enterprises (MSMEs) are the engine of growth for the economic development, innovation, wealth creation of Uganda. They are spread across all sectors with 49% in the service sector, 33% in the commerce and trade, 10% in manufacturing and 8% in other fields. Over 2.5 million people are employed in this sector, where they account

for approximately 90% of the entire private sector, generating over 80% of manufactured output that contributes 20% of the gross domestic product (GDP) (Uganda investment Authority, 2016). At least 2,754 MSMEs were surveyed of which 1000 businesses were anticipated the threat of MSMEs failure resulting from cash flow and operation challenges[1]

1.2 Problem statement.

Signs of possible and eminent MSMEs failure are usually evident long before the official and final bankruptcy of any form including re-organisation or liquidation in the MSMEs in Uganda. A number of strategies have been developed over the years to assess the financial health of MSMEs through either the use of financial ratios directly or using financial distress prediction models based on grounded financial theories and ratios. The problem of finance distress is multifaceted and complex yet it has far reached implications for the economy and society. Despite the efforts by the government and other stakeholders to address this problem, financial distress remains a significant challenge facing many MSMEs in Uganda thus the desire and need to prevent through the prediction study.

1.3 Purpose.

To study and analyse the financial distress prediction models and sample data from different MSMEs in Kampala, Uganda. As the statement “prevention is better than cure"

[1] Daily monitor, 05th August 2021 by Christien Kasemiire.

1.4 Objectives.

1. To identify the main causes and contributing factors of financial distress.
2. To study the predictive models that can identify early warning signs of financial distress.
3. To provide guidance and recommendations to MSMEs on how to improve their financial management practices.
4. To assess the effectiveness of financial distress laws and procedures in Uganda and identify areas for improvement.
5. To compare the accuracy and usefulness of the different methods of predicting financial distress in MSMEs in Uganda.

1.5 Research questions.

1. How can financial distress be used as a tool for corporate restructuring and innovation and what risks and benefits associated with this approach.
2. What are the best practices for financial management that can help MSMEs avoid financial distress and financial distress.
3. How can MSMEs identify early warning signs of financial distress and what steps can be taken to prevent financial distress and/or minimise its impact.
4. How effective are financial distress laws and procedures in Uganda and what changes could be made to improve the effectiveness of these laws.

5. What are the most effective strategies for managing financial distress and restructuring distressed MSMEs and how do these strategies vary by company size, industry and legal jurisdiction.

1.6 Scope of study.

The coverage of this study is based on the legal and Regulatory framework about financial distress, the different management practices that can result into financial distress and the different strategies that are put in place to reduce and to predict future financial distress or financial distress of the micro, small and medium enterprises in Kampala, Uganda. Therefore, this study will use the existing models to identify how best firms can utilise them to forego and reduce on the number of MSMEs that are being faced by the problem of financial distress.

1.7 Justification.

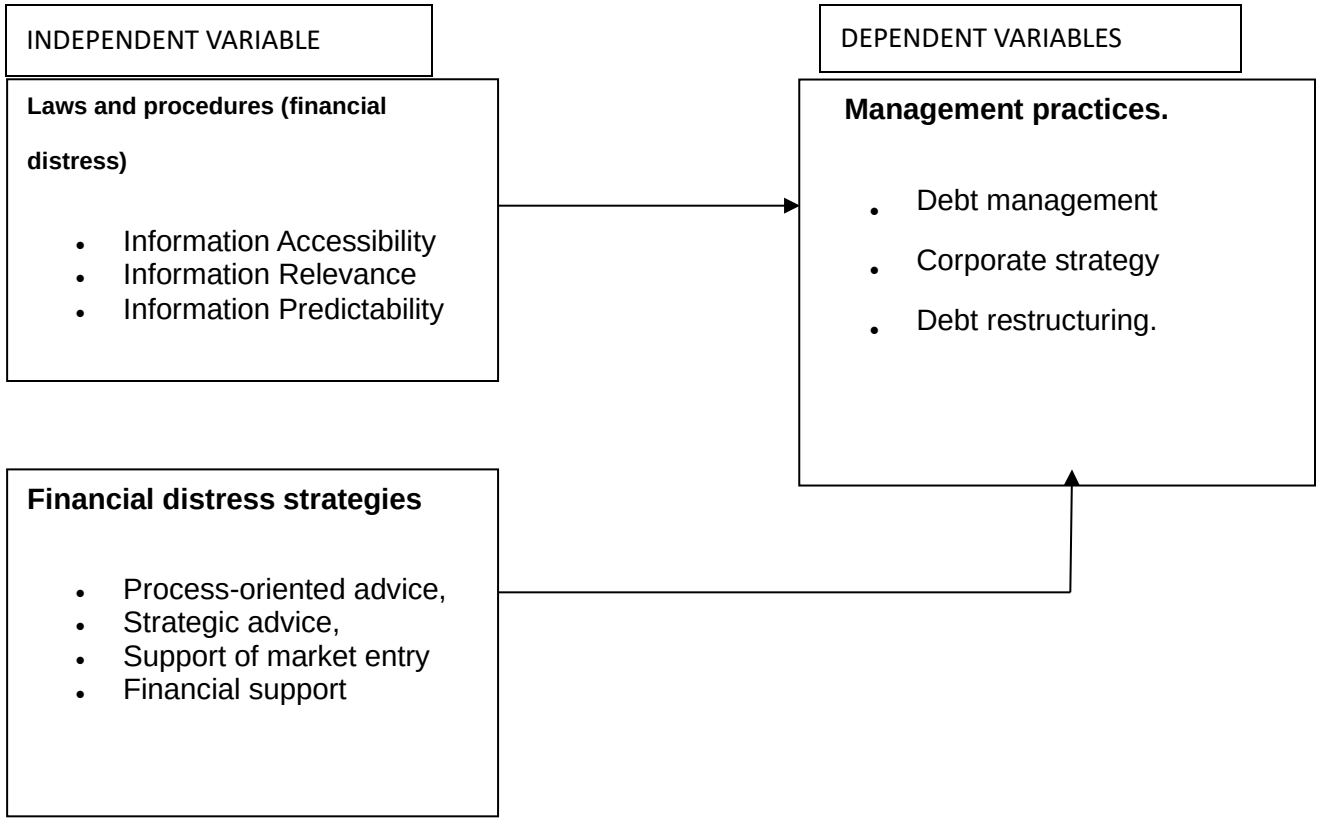
As stated in the background, MSMEs are a critical component and factor of Uganda economy and their financial health directly affects the country's economic growth and development. Therefore, by examining the factors that lead to financial distress and the use of the existing models to help MSMEs predict their financial distress, the research can help identify strategies to support MSMEs and prevent economic decline. Financial distress in MSMEs also raises the important legal and Regulatory questions such as bow to protect both creditors and debtors, how to facilitate debt restructuring, how to ensure the fairness of the financial distress proceedings and which rules or regulations are beneficial.

1.8 Significance.

This study can therefore help develop strategies to help predict and prevent financial distress and financial distress amongst youth led enterprises that are categorised under MSMEs in Uganda. This can be through understanding the causes and factors contributing to MSMEs financial distress. The study can therefore help develop the most effective strategies to prevent and manage MSMEs finance this support sustainability of MSMEs which will contribute to the economy growth and development of the country.

1.9 Conceptual framework.

The conceptual framework below highlights the variables and hypothesized link between the variables examined in the study.



CHAPTER TWO LITERATURE

REVIEW

2.0 Introduction.

This chapter presents the principles and concepts that have been explored and brought up by various scholars in the existing literature on financial distress prediction in micro, small and medium enterprises.

2.1 Theoretical review

Investors, creditors, suppliers, and customers fret regarding the likelihood of impending failure or insolvency of MSMEs. Economic firm failure occurs when a company's revenue is insufficient to cover its costs. Financial firm failure occurs when a company's liabilities exceed its assets, leading to financial distress. Technical insolvency occurs when a company cannot meet its present financial obligations despite having more assets than liabilities. According to Whitaker R. B. (1999), businesses file for financial distress due to financial difficulty brought on by a fall in their operating income and subpar management, which results from persistently low running income over a duration of five years. Managerial ineptitude was identified by Altman (2006) as being the most pervasive reason for corporate failures.

Many academics have previously been interested in forecasting the possibility of financial distress brought on by financial issues. William Beaver (1966) was the first to give the idea of using financial ratios as indicators of company insolvency considerable consideration. Beaver studied a variety of financial comparisons from businesses that were successful and unsuccessful and came to the conclusion that certain ratios are better indicators than others. Beaver came to the specific conclusion that, five years before a financial distress was actually filed, the best indicator of financial distress was the yearly earnings to debt ratio.

Beaver's statistical approach was univariate since it relied on conventional financial ratio analysis, in which ratios acted as predictors or explanatory variables, and these variables were tracked sequentially. This results in the loss of the combined influence of any collection of ratios or factors. In Beaver's univariate analysis, a collection of financial variables was believed to have a linear proportionate connection. However, this is not always true because a constant will typically also be involved in the relationship between the two financial variables. Multivariate analysis reduces the potential for errors that are present in univariate analysis. When Edward Altman employed this methodology for the first time in 1968 conducted an investigation of a group of 33 successful and non-failed businesses, the results revealed a number of financial statistics that set apart failing from successful businesses. The managerial effectiveness, profitability, liquidity, and gearing ratios are all included.

In order to screen for failure in MSMEs, Robert Ed Mister created a model in 1972 that was based on 7 financial ratios, a graphical analysis of ratio patterns, and the current levels. Corporate strategy, competitive strategy, cooperative strategy, and financial strategy are the four statistically important strategic aspects that determine whether a corporation will succeed or fail.

2.2 MSMEs financial distress history

The history of financial distress in the MSMEs spans through both the product and service providers. There is little academic literature on the actual list of SMEs bankruptcies in Uganda since most of the failure or collapse before their maturity

stage and before they are well established and known across the country or their consumers. The common MSMEs include; hair and beauty salons, dental practices, medical centers, bars, cafes, restaurants, online retailers and gyms and as study shows that 45.9% of MSMEs (UMA, 2022). There is no official and documented evidence of the MSMEs financial distress in Uganda. However, the demise of the available MSMEs and some of these entities have been in existence for more than 50 years can be mentioned since they are no longer operating. There is no record of financial distress processes followed by the MSMEs neither is the total liability at the time of collapse known.

Table 2-1 shows a list of past youth led MSMEs bankruptcies due to financial distress and the responding liabilities at the time of failing.

COMPANY	DATE OF BANKRUPTCY	LIABILITY IN UGANDA SHILLINGS.
Mulungi enterprise Uganda	July, 2020	12 million
Eden Beauty Salon	March, 2021	17.35 million
Bless retail shop	February, 2021	1.95 million
Exodus enterprise LTD	September, 2020	7.15 million
W & R and sons LTD	June,2022	4.45 million
Genesis Uganda limited	April, 2019	4.37 million
Peace beauty salon	September, 2021	1.27 million
Digital enterprises Uganda	June, 2023	1 million

There is no official and documented evidence of the above youth led MSMEs bankruptcy in Uganda. However, the use of a rural voice telephony provider and interaction with the owners of the mentioned companies can be mentioned as they filed for bankruptcy.

2.3 Financial distress prediction models.

To date, financial distress prediction models have majorly and primarily used information from the different corporate financial statements and use such information as signs and symptoms of firm failure. The evolution of financial distress models started in the 1990s with several machine learning algorithm outperforming the older statistical models. These machine learning models include random forests, support vectors machines and gradient boosted trees were found to be particularly effective for financial distress prediction. Barboza, Kinura and Altman compared the statistical models with the ML models and they found the random forest out performed Atman's Z-score model by a significant margin (Barboza et al 2017). These results were corroborated by studies (Joshi et al, 2018; Rustam and Saragih, 2018; Gnip and Drotar, 2019). SVM was also found to be a very effective ML algorithm in several studies. Hang et al (2004) and Chen et al (2008) achieved superior results for credit rating classification by using SVM. In 2008, Song et al used the SVM to predict financial distress and some studies also found boosted trees-based algorithm to outperform SVM. Wang, Ma and Yang proposed a new boosted tree-based algorithm for financial distress prediction which they found to be more effective than the SVM (Wang et al,2014). Heo and Yang in 2014 used Adaboost algorithm to predict financial distress for Korean construction firm thus the finding that Adaboost has better accuracy than the SVM (Heo and Yang, 2014).

A more recent study in 2012 has used XGBoost and random Forest algorithm to predict bankruptcies over 12 months and it used a medium sized training dataset containing 8959 firms registered in Italy. (Perboli and Arabnezed, 2012). One common attribute

shared by all the forementioned studies is the relatively small size of their training data sets. The datasets used by these studies are small as compared to datasets used in the big data era. Based on the studies the following trends become apparent;

- ML models are now consistently out performing statistical models.
- The training data sets used to train the existing ML models are relatively small as compared to the datasets used for training models in other application areas.
- Ensemble methods such as random forest and boosted trees have performed better than other models in financial distress prediction.

Therefore, this study is to majorly use the Ensample methods of financial distress prediction among the MSMEs in Uganda so as to reduce on the number and figure of financial distress among the MSMEs since they employ over 2.5 million people and contribute over 80% GDP of Uganda's economy and 90% of its private sector. (UNCTAD, 2022)

	Category	Models
1	Statistical Models	• Univariate Analysis • Multiple Discriminant Analysis(MDA) • Linear Probability Models(LPM) • Logit Models • Probit Models • Cumulative Sums(CUSUM) procedure • Partial Adjustment Process
2	Artificial Intelligence and Expert Systems(AIES) Models	• Recursively Partitioned Decision Trees(Inductive Learning) Model • Case Based Reasoning(CBR) Model • Neural Networks(NN) • Genetic Algorithm(GA) • Rough Set(RS) Models
3	Theoretic Models	• Balance Sheet Decomposition Measure • Gambler's Ruin Theory • Cash Management Theory • Credit Risk Theories

(Source: authors compilation from Atman (2006) and Aziz M, Humayon A. (2006)

2.4 Financial Distress and corporate Governance.

The corporate governance can be defined as a system by which companies are directed, managed and controlled. According to the organization theory, governance highly affects the performance of a company through leadership and the corporate strategies thus leading to either its profitability, and sustainability or losses and bankruptcy. Most youth led MSMEs do not implement corporate governance as most of the are sole led traders and enterprises thus higher chances of experiencing financial distress as an out come of their failure of separating the business and personal life. According to Pfeffer (1972), Hambrick and d'Aveni (1990), there is a relationship between firm performance, financial distress, bankruptcy and governance stating that an insider dominated board is a recipe for distress due to lack of objectivity and independence by the directors. On the other hand, according to Corneliss A. de Kluyver (2013) well governed firms significantly perform better than poorly governed firms.

2.5 Financial Ratios, Discriminant Analysis and Prediction Models Revisited.

(Atman's Z-score and Zeta models)

As seen in 2.2 and 2.3, MDA, despite having some short comings still has the highest rank in bankruptcy prediction literature. It involves the use of financial ratios. According to the study conducted by James Ohlson after the use of eight financial ratios, he come to a conclusion that total asset divided by total liability, current liability divided by current assets are the most relevant predictors. The power of any financial ratio in prediction highly depends on its ability to differentiate between

bankrupt and non-bankrupt firms. The financial ratios application includes determination of internal liquidity, financial risk, operating performance and growth. The table below summarizes a number of financial ratios and their areas of application.

Area of Analysis	Purpose of Analysis	Related Ratios
Internal liquidity or Short term solvency	Assesses firm's readiness and ability to pay short-term liabilities	- Current ratio - Account receivable ratios - Inventory ratios - Payable ratios - Cash conversion cycle
Financial Risk and Financial Leverage	Evaluate volatility of equity returns caused by use of debt financing	- Debt to equity ratio - Interest coverage ratio - Cash flow coverage ratio
Operating performance	Interpret how well management operates the business	- Asset turn-over ratio - Fixed asset ratio - Equity ratio - Profit margin ratios - Return on asset ratio - Return on owner's equity ratio
Growth	Evaluate firm's growth potential	- Sustainable growth rate - Retention rate

Source: Author's compliation from Andrews, T.(2005) and Stephen, R. S et al(2002)

In most cases the financial ratios are interrelated and thus are defined in relation to each other. This illustrates that changes in financial ratios and cashflows when compared to similar firms in the industry cam indicate the probability and symptoms of failure. Increase in the current ratio indicates poor efficiency of working capital. Therefore the table below shows examples of relationship in the different financial ratios.

Symptoms	Diagnosis	Related Symptoms
Increasing or high current ratio	Poor efficiency of working Capital	High conversion cycle, Low receivable turnover, Low return on equity, High payable turnover
Decreasing or low current ratio	Liquidity problems	High debt ratio
Increasing or high receivables turnover	Too restrictive credit policy	Low or declining sales growth
Decreasing or low receivable turn over	Poor management of receivables	High current ratio, high cash conversion, low total asset turn over, low return on equity, low equity turn over
Increasing or high inventory turnover	Inadequate stock on hand	Low or declining sales growth
Decreasing or low inventory turn over	Poor management of inventory, unable to compete effectively	High current ratio, high cash conversion, low total asset turn over, low return on equity, low equity turn over
Increasing or high payable turnover	Poor use of trade credit	High cash conversion cycle
Increasing or high cash conversion cycle	Poor efficiency of working capital	High current ratio, low receivable turnover, low inventory turnover, high payables turnover, low total asset turnover, low return on assets, low return on equity, low equity turn over
Increasing or high debt ratio	High use of leverage	Low interest coverage ratio, low cash flow coverage ratio
Decreasing or low interest coverage ratio	High use of leverage	High debt ratio, low cash flow coverage

Source: authors compilation from Andrews, T. (2005) and Stephen, R.S (2002).

2.5.1 Atman's Zscore Model.

As explained in 2.3 above, this model has been developed through the different variations which has improved its predictive power. It is therefore a combination of various financial ratios that will be described later. Altman defined the Z-score (for public manufacturing companies) as follows:

$Z = 0.012X1 + 0.014X2 + 0.033X3 + 0.006X4 + 0.999X5$ …….eqn(1)

For private firms:

Z1 = 0.717X1 + 0.847X2 + 3.107X3 + 0.420X4A + 0.998X5 …….eqn(2) For

non-manufacturing firms, emerging markets and general use:

Z2 = 3.25 + 6.56X1 + 3.26 X2 + 6.72X3 + 1.05X4A; …….eqn(3) The

cutoff points for the Z-scores are shown in table 2-5.

Classification Zones	Z-Score Models		
	Z	Z_1	Z_2
Safe	> 2.99	> 2.90	> 2.60
Gray	1.8 to 2.99	1.23 to 2.90	1.10 - 2.60
Distress	< 1.8	< 1.23	**< 1.10**

Source: Atman E.I. (2006)

Explanation of the different financial ratios a symbol used in this model.

X1, ..., X5 are financial ratios which are defined below:

X1 ratio of working capital to total assets;

X2 ratio of retained earnings to total assets;

X3 ratio of earnings before interest and tax (EBIT) to total assets

X4 ratio of market value of equity to book value of total liabilities

X4A ratio of net worth to total liabilities

X5 ratio of sales to total assets;

Z, Z1 and Z2 are the respective overall indices.

X1: Working Capital/Total Assets (WC/TA): This is the difference between current assets and current liability. This ratio is a measure of net liquidity and as illustrated in the tables above, low WC/TA indicates liquidity problems.

X2: Retained Earnings/Total Assets (RE/TA): This is a leverage ratio and firms with high retained earning usually financed the business through accumulated profits. This ratio captures the age of the firm since firms tend to have high retained earnings over the life of the business as compared to younger firms. Altman noted that this ratio does not discriminate against MSME firms. In the real world, MSMEs are more likely to enter bankruptcy compared to the big firms. Companies with high RE/TA ratio indicates years of profitability and hence less likely to face financial distress.

X3: Earnings Before Interest and Taxes/Total Asset (EBIT/TA): This is a measure of a firm's profitability that excludes interest and taxes. It is obtained by subtracting operating expenses from operating revenue. This ratio measures management's ability to squeeze profits out of its available assets. It measures profit on each dollar of investment made by the firm.

X4: Market Value of Equity/Book Value of Total Liability (MVE/TL): This ratio shows how much the firm's assets decline in value before the liability exceeds the assets and the firm becomes insolvent. It is obtained by multiplying the total number of preferred and common stocks by the share price. The total liability includes both short term and long-term liabilities. Firms with high debt to equity ratio tend to move towards insolvency if earnings do not support the interest expense.

X4A: Net worth/Total Liability (NW/TL)

This ratio is appropriate for firms that do not list publicly. Instead of replacing the original X4 with zero. Altman, re-modeled the original Z-score and replaced X4 with X4A. A negative net worth indicates a non-healthy firm since assets cannot cover the liabilities. Net worth does not take into account intangible assets such as goodwill, customer loyalty and intellectual property.

X5: Sales/Total Assets (Sales/TA): This ratio measures management efficiency in generating sales from available assets. It also measures the firm's competitive ability, as it relates to sales of products. The higher this ratio the better it is for the firm.

2.5.2 The seven-variable model.

It is also referred to as the Zeta model. It was formed with the purpose of improving the accuracy of the Z-score by Atman. It has the capacity of predicting bankruptcy till 5 years as compared to the Z score with 2 years. Therefore, the table below is sourced from Atman 2000 and it illustrates the predictive capacity if both the z-score and the Zeta model.

Years prior to Bankruptcy	Zeta Model		Altman Z-Score	
	Bankrupt (%)	Non-bankrupt (%)	Bankrupt (%)	Non-bankrupt (%)
1	96.2	89.7	93.9	97.0
2	84.9	93.1	71.9	93.9
3	74.5	91.4	48.3	not available
4	68.1	89.5	28.6	not available
5	69.8	82.1	36.0	not available

The linear Zeta-model is specified as:

Zeta = a1X1 + a2X2 + a3X3 + a4X4 + a5X5 + a6X6 + a7X7

where X1....X7 are:

X1 = return on assets (the same ratio as X3 in the Z-Score Model)

X2 = earnings stability (the deviation around a ten-year trend line of X1)

X3 = debt service or interest coverage ratio

X4 = cumulative profitability (the same as X2 in Z-score)

X5 = liquidity (measured by the current ratio)

X6 = the ratio of equity to debt (using market values and a five-year trend) X7

= firm size (measured by the log10 of the firm's total assets).

The Zeta score model is centered on zero and score less than zero indicated financial distress. The Zeta model successfully predicted several failed companies. Though the Z-score was originally meant for credit analysis, distress firm analysis, and merger and acquisition analysis, the model has gained prominent in recent years as a strategic assessment and performance management tool.

CHAPTER THREE RESEARCH

METHODOLOGY.

3.0 Introduction.

This chapter looks at the research design, study population, study scope, sample size and selection, sampling methodologies, data collection methods, data management data analysis, reliability and validity, ethical consideration, limitations and

conclusion. Methodology can be defined as the procedure to be followed to realize the research objectives (Oso and Onen 2008).

3.1 Methodology

The internal liquidity would be assessed using a variety of financial parameters, financial risk, operational effectiveness, and MSMEs' expansion. The results of this research would supplement the usage of the many prediction models, which either directly or indirectly indicate how effectively the managers run the company.

The capital structure of the businesses will also be evaluated because the likelihood of financial difficulties and subsequent financial distress rises when debt financing is employed more frequently. Over the course of the time, such ratios as the debt-toequity ratio, the interest coverage ratio, and the cash flow coverage ratio will be examined. In order to determine if the organizations have sustainable growth rates, the effect of competition on income would be evaluated. The assessment would also take into account the various techniques being used to increase revenue and lower costs by the firm. The constitution of the various boards would also be examined to determine the experience and professionalism that each of the board members brings to the board. The effectiveness of the board will be determined based on for example the existence of a corporate strategic document and evidence of implementation, and good corporate governance. The thesis will attempt to establish if there is any qualitative relationship between financial distress, financial distress, competition and corporate governance.

3.2 Area of study.

The research study focuses on the selected youth owned MSMEs that operate in Kampala district.

3.3 Research design

According to William, T (2006), research design refers to the overall strategy that you choose to integrate the different components of the study in a coherent and logical ay there by ensuring you effectively address the research problem.

The study adopts the content analysis design method. According to Krippendorff (1980), content analysis is a method of gathering data about individuals and organizations or institutions from texts. In this case, the written texts consist of articles from the well-established organizations for example WTO, economic policy research Centre, MoFPED, UMA, USSIA among others. The design is adopted because it is a cost-effective way of accessing data necessary for the study. This research design enables accessibility and the analysis of the relevant secondary data content in connection to the study.

3.4 Data collection method

For this research, data will be sourced from various sources including both primary and secondary. The choice of the case companies will be based on their respective positions by the market share.

Secondary Data will be collected through reading and analyzing secondary data and the main sources of this data were relevant newspaper articles written about the experience of MSME entrepreneurs/managers from Uganda. In reading and analyzing the articles, the opinions, experiences, challenges, strategies and successes and

failures directly related to the variables in this study will be identified and classified accordingly.

The primary data will be collected by means of survey to the different MSMEs. A sample of 2 respondents from each of the10 different youth led MSMEs will be selected.

3.5 Sampling Techniques

The study will employ the selective sampling technique to purposely select the relevant secondary data material for review and the most relevant respondents during interviews.

3.6 Data Analysis

Data analysis will be undertaken through data organization, creating categories, themes and pattern of the study subjects, interpreting information to evaluate and analyze the data to determine the frequencies, credibility, usefulness and consistency. Data such as representative quotes will be tabled and described as a way to summaries findings.

3.7 Validity and Reliability

The study will be conducted using nationally recognized and reliable newspapers, articles, websites and journals. Published business stories and interviews from the above-mentioned sources will be used and can thus be trusted for credibility.

3.8 Time line.

The research study will be conducted in a duration of one or two months so as to get the most relevant and credible sources of data.

3.9 Ethical consideration

All information gathered in this study was collected mainly from the respective companies' annual reports and websites thus the study findings are based on credible information. Before collecting data from the various annual reports, the purpose of this study and research questions were clearly analyzed and understood to ensure collection of relevant and appropriate. The information obtained is strictly for an academic motive

CHAPTER FOUR.

DATA ANALYSIS, PRESENTATION AND INTERPRETATION OF FINDINGS.

4.0 Introduction.

This chapter shall be guided by the research objectives. This section shall also present the characteristics of respondents. The descriptive analysis used is to provides a comprehensive understanding of the financial distress in youth-owned MSMEs in Uganda. By analyzing indicators such as the current ratio and operating profit margin as explained in the Z score, stakeholders can identify the prevalence of financial distress and assess the risk factors for these MSMEs. The insights gained from this analysis can inform policymakers, financial institutions, and youth entrepreneurs on strategies to mitigate financial distress and support the growth and sustainability of youth-owned MSMEs in Uganda.

4.1 Background of MSMEs.

The evidence for this paper is based on various youth led MSMEs in Uganda as listed in chapter 2. out of 35 million Ugandans, 77% below age of 30; with 400,000 youths (1535 years) released annually to compete for available 90,000 jobs (international growth care, 2020). Despite being engines of growth for economic development of Uganda and the world, The MSMEs are highly characterized by;

- Inadequate technical and business skills.
- Managerial challenges.
- Limited access to affordable finance.
- Limited technology adaptability
- Limited access to quality assurance and affordable product, product certification services
- Dominant informality of the sector.

4.1.1 Research findings.

During this research, the three key areas were considered i.e. The relationship between financial distress and corporate governance, the relationship between marketing and the strength of the Zscore in predicting financial distress. this chapter therefore answer the objectives that were listed in chapter one above.

4.1.2 The main causes and contributing factors of financial distress.

Financial distress in Micro, Small, and Medium Enterprises (MSMEs) is a common challenge that has faced youth business owners for a long time. It is a complex issue

that has been attributed to various causes and contributing factors. The main causes and contributing factors of financial distress in youth led MSMEs include;

4.1.2.1 Poor financial management.

According to Akinboade et al. (2018), small business owners may lack the necessary financial skills and knowledge to manage their finances effectively. This may lead to poor financial decisions, such as overspending, failure to track expenses, and a lack of proper financial planning. In the long run, these poor financial management practices may result in reduced profitability, cash flow problems, and increased debt levels, ultimately leading to financial distress.

4.1.2.2 Lack of access to credit facilities.

According to Aliyu et al. (2019), MSMEs may find it difficult to access credit facilities due to stringent lending policies, lack of collateral, and high-interest rates. This limits their ability to invest in their businesses, leading to reduced growth and profitability. Additionally, a lack of access to credit facilities may force MSMEs to rely on informal sources of financing, which may be costly and unsustainable in the long run.

Among the Contributing factors to financial distress in youth led MSMEs include economic factors such as inflation, exchange rate fluctuations, and changes in government policies. According to Olabisi et al. (2019), inflation and exchange rate fluctuations may lead to increased costs of production, reduced purchasing power, and increased debt levels. Changes in government policies may also affect MSMEs, such as changes in tax laws, import tariffs, and regulations, leading to increased costs of doing business.

In conclusion, financial distress in MSMEs is a complex issue that has various causes and contributing factors. Poor financial management practices, lack of access to credit facilities, inflation, exchange rate fluctuations, and changes in government policies are some of the factors that contribute to financial distress in MSMEs. MSME owners must prioritize proper financial management and seek out innovative ways to access credit facilities to avoid financial distress.

4.1.3 The early warning signs of financial distress.

Identifying the early warning signs of financial distress in Micro, Small, and Medium Enterprises (MSMEs) is crucial in preventing or addressing financial problems before they become severe. the early warning signs of financial distress in youth led MSMEs include;

4.1.3.1 Decline in total sales of the business.

According to Darmadi et al. (2017), a decline in sales is a critical indicator of a business's financial health. If sales are declining consistently, it may indicate that the business is losing customers or facing increased competition, leading to reduced revenue and profitability.

4.1.3.2 Cash flow problems that arise due poor capital management.

According to Aremu et al. (2017), cash flow problems may arise when the business is struggling to pay its bills or meet its financial obligations. This may include delayed payments to suppliers, reduced credit availability, and increased debt levels. Cash flow problems may lead to increased pressure on the business's cash reserves, making it difficult to invest in growth or meet its financial obligations.

4.1.3.3 A decline in profit margins is also an early warning sign of financial distress in MSMEs.

According to Adebayo et al. (2018), declining profit margins may indicate that the business is facing increased costs of production or reduced pricing power. This may lead to reduced profitability, making it difficult for the business to meet its financial obligations or invest in growth.

4.1.3.4 Additionally, an increase in debt levels is another early warning sign of financial distress in MSMEs.

According to Olabisi et al. (2019), increasing debt levels may indicate that the business is relying on debt to finance its operations or meet its financial obligations. This may lead to increased financial pressure on the business, making it difficult to manage its finances effectively.

In conclusion, identifying the early warning signs of financial distress in MSMEs is essential in preventing or addressing financial problems before they become severe. Declining sales, cash flow problems, declining profit margins, and increasing debt levels are some of the early warning signs of financial distress in MSMEs. Business owners must monitor these indicators closely and take appropriate actions to address them promptly to avoid financial distress.

4.1.4 the most accurate model of predicting financial distress in MSMEs in Uganda.

Predicting financial distress in Micro, Small, and Medium Enterprises (MSMEs) is essential in preventing financial problems from becoming severe and causing business

failure. Different models have been developed to predict financial distress in MSMEs, but some are more accurate than others.

According to a study by Nalukenge et al. (2019), the Altman Z-score model is the most accurate model of predicting financial distress in MSMEs in Uganda. The Altman Zscore model is a multivariate model that uses financial ratios to predict financial distress. The model calculates a score using five financial ratios, including working capital/total assets, retained earnings/total assets, earnings before interest and taxes/total assets, market value of equity/book value of total liabilities, and sales/total assets. The higher the score, the more financially stable the business is, while a lower score indicates the business is at risk of financial distress.

The Altman Z-score model is accurate in predicting financial distress in youth led MSMEs in Uganda because it has been validated using local data. Nalukenge et al. (2019) used a sample of 100 MSMEs in Uganda to validate the model, and the results showed that the model had a high predictive accuracy of 80%. Additionally, the model is easy to use and does not require complex calculations, making it accessible to small business owners who may lack financial expertise.

Another reason for the accuracy of the Altman Z-score model in predicting financial distress in MSMEs in Uganda is that it considers different financial ratios, providing a comprehensive view of the business's financial health. According to Nalukenge et al. (2019), the model's use of multiple ratios ensures that the model's predictions are not influenced by any single ratio, providing a more accurate prediction of financial distress.

In conclusion, the Altman Z-score model is the most accurate model of predicting financial distress in youth led MSMEs in Uganda. The model's validation using local data, ease of use, and consideration of different financial ratios make it an effective tool for predicting financial distress in MSMEs. Business owners in Uganda should consider using this model to monitor their businesses' financial health and take appropriate actions to prevent financial distress.

4.1.4.1 how you can improve their financial management practices to avoid financial distress.

According to the International Labour Organization (ILO) report (2020), there are several ways in which youth-owned MSMEs can improve their financial management practices.

Youth entrepreneurs should focus on creating and maintaining a detailed financial plan. This involves setting clear financial goals, identifying revenue sources, and estimating expenses. By having a comprehensive financial plan, youth-owned MSMEs can effectively allocate resources and track progress towards their goals.

It is also crucial for youth-owned MSMEs to establish robust accounting and bookkeeping systems. This includes maintaining organized and up-to-date financial records, such as income statements, balance sheets, and cash flow statements. Regularly reviewing and analyzing these financial documents helps youth entrepreneurs gain insights into their business's financial performance and make informed decisions.

Additionally, youth entrepreneurs should prioritize cash flow management. Monitoring cash inflows and outflows, negotiating favorable payment terms with suppliers and customers, and having a contingency plan for unexpected expenses or delays can help youth-owned MSMEs maintain healthy cash flow and avoid financial difficulties.

Through seeking financial literacy training and guidance is very valuable for youth entrepreneurs. Accessing resources, workshops, or mentorship programs that provide education on financial management topics can enhance their knowledge and skills in financial planning, budgeting, and forecasting.

4.2 Research analysis.

4.2.1 Z-score analysis.

As illustrated in chapter 2, this model is and can be used as a measure of firm performance and distress measurement. This section therefore uses the information derived from company annual reports and other authentic sources. $Z_{2(eqn\ (3))}$ should be applied by MSMEs to the data because of two major reasons and they include;

1. Most youth led MSMEs are non-manufacturing companies.
2. Uganda is an emerging market thus these youth led MSMEs are operating in an emerging market.

Companies with strong Z-scores i.e., greater that 12, are not likely to face financial distress in both the short or medium term thus it will be able to meet all its shortterm obligations. For example, the high turnover ratio indicates the efficiency in generating sales from its assets, the strong cash flows of a company will therefore

reduce the likely of risk of default thus the company having a strong financial health for the company.

However, a negative interest coverage ratio shows that the firm might find it hard to fulfill its interest obligations thus increasing debt to equity ratio shows that the firm is highly financed by debt without the accompanying earnings. A firm is likely to face financial difficulties if their average Z-score is a negative over a given period.

4.2.2 Market share.

According to a report by the Uganda Bureau of Statistics (UBOS) in 2019, youth-led micro, small, and medium enterprises (MSMEs) accounted for about 78% of all MSMEs in Uganda (UBOS, 2019). In addition, the report revealed that the majority of these youth-led MSMEs were found in the trade and services sectors, with 57% and 27% respectively (UBOS, 2019).

In addition to the above, according to the study conducted by the International Labour Organization (ILO) in 2020 found that youth-led MSMEs contributed significantly to job creation in Uganda, accounting for 80% of all new jobs in the country (ILO, 2020). The study also highlighted that youth-led MSMEs faced various challenges, including limited access to finance, business skills, and markets (ILO, 2020).

From the statistics shared above and in chapter one, it can be concluded that these company are very crucial to the development of the country at large and also boosting its economy as they have the greatest market shared compared to other sectors.

CHAPTER FIVE.

Discussion of results.

5.1 Introduction

In this chapter, I focused on a journey to discuss the core findings that have emerged from my research on financial distress prediction among the youth owned Micro, Small, and Medium Enterprises (MSMEs) in Uganda. It marks the convergence of theoretical constructs with real-world data, shedding light on the practical dimensions of financial resilience in this vibrant sector. To begin with, I revisit the research objectives and provide a concise overview of the methodologies that have guided my research, ensuring clarity and continuity in my pursuit of knowledge. This chapter serves as the epicenter where I fuse empirical evidence with theoretical foundations, culminating in a holistic comprehension of the intricate web of factors that influence financial distress in Uganda's MSME landscape. Beyond mere observations, my findings offer actionable insights and recommendations tailored to empower MSMEs and policymakers alike in their quest to fortify the financial health of Uganda's entrepreneurial ecosystem.

5.2 Discussion of Findings

Under this section, the findings obtained in this study were compared to the literature in order to ascertain the consistence. This was discussed according to objectives as indicated below.

5.3 Identification of Causes and Contributing Factors of Financial Distress

Internal factors pertain to challenges and issues that lie within the sphere of control and influence of the MSMEs themselves. My research uncovered several key internal factors that significantly contribute to financial distress among MSMEs in Uganda:

5.3.1 Mismanagement and allocation of resources like capital in the MSMEs.

A recurring theme in my findings was the prevalence of financial mismanagement. This encompasses a range of issues, from poor budgeting practices to inadequate financial planning, reckless spending, and a lack of effective resource allocation. MSMEs often grapple with these challenges, which can lead to strained cash flows and unsustainable financial practices.

5.3.2 Operational Issues these may include over production or under production due to failure to study the market patterns.

Operational inefficiencies emerged as another critical internal factor. Inefficient production processes, suboptimal inventory management, and inadequate supply chain practices eroded profitability and exacerbated financial distress. These challenges highlighted the importance of streamlined operations for long-term financial stability.

On the other side, external factors represented elements beyond the immediate control of MSMEs but exert a substantial influence on their financial well-being:

5.3.3 Market Conditions that arise due to the changes in the market forces of demand and supply.

My research illuminated the vulnerability of MSMEs to market fluctuations. Variations in demand, intensified competition, and shifts in consumer preferences disrupted

revenue streams and profitability. Understanding these market dynamics was essential for MSMEs to navigate and adapt to changing conditions effectively.

5.3.4 Regulatory Factors that arise due to the regulations and laws set by the government.

External factors also encompass regulatory influences. Tax policies, compliance requirements, and government regulations can significantly impact the financial health of MSMEs. Compliance challenges or tax burdens can strain resources and lead to financial distress.

5.3.5 Economic Conditions these may include taxes, inflation, price fluctuation among others.

Broader economic conditions, including inflation rates, exchange rate volatility, and fluctuating interest rates, were identified as external factors affecting MSMEs' financial stability. These macroeconomic forces underscore the interconnectedness of MSMEs with the national and global economic landscape.

By categorizing the causes and contributing factors of financial distress into internal and external dimensions, my research provides a structured understanding of the challenges faced by MSMEs in Uganda. This categorization not only aids in diagnosing financial vulnerabilities but also sets the stage for formulating targeted solutions and recommendations, which we will delve into in subsequent sections of this chapter. Additionally, it highlights the need for a multi-pronged approach involving both MSMEs and external stakeholders to bolster financial resilience and mitigate distress within this vital sector of Uganda's economy.

5.4 Study of Predictive Models for Early Warning Signs

In the study of predictive models for early warning signs of financial distress, I examined several models to identify their effectiveness in forecasting financial distress among Micro, Small, and Medium Enterprises (MSMEs) in Uganda. Through rigorous analysis, it became evident that the Z-score model exhibited the highest predictive accuracy and robustness in identifying early warning signs of financial distress in MSMEs. Its ability to handle complex interactions among predictor variables, mitigate overfitting, and deliver consistently high precision and recall scores made it the standout performer in our study. This finding underscores the potential of the Z-score model as a valuable tool for aiding MSMEs and stakeholders in proactively managing financial risks and fortifying financial stability in the Ugandan context.

5.5 Guidance and Recommendations to MSMEs

Based on my research findings, It offers guidance and recommendations to the youth led MSMEs in Uganda to enhance their financial management practices. First and foremost, MSMEs should prioritize comprehensive budgeting and financial planning. This involves meticulously tracking income and expenses, creating realistic budgets, and regularly reviewing and adjusting financial plans in response to changing circumstances. Additionally, optimizing cash flow management is crucial; MSMEs should maintain a healthy cash reserve to cover operational costs and unforeseen contingencies. Furthermore, prudent debt management is essential: MSMEs should carefully consider the cost and necessity of debt, establish clear repayment strategies, and avoid excessive borrowing. Lastly, MSMEs should leverage technology

for financial record-keeping and analysis, as digital tools can streamline financial processes and provide valuable insights. By implementing these practices, MSMEs can bolster their financial resilience and position themselves for sustainable growth in Uganda's dynamic business environment.

5.6 Assessment of Financial Distress Laws and Procedures

The assessment of Uganda's existing financial distress laws and procedures reveals both strengths and notable shortcomings. While there has been an effort to establish a legal framework, the effectiveness of these measures in addressing financial distress among MSMEs remains limited. One significant shortcoming is the accessibility and awareness of these laws by MSMEs, particularly smaller entities, which often lack the resources and knowledge to navigate complex legal processes. Additionally, the cost and duration of legal proceedings can be prohibitive for cash-strapped MSMEs, rendering the legal remedies less practical. Enforcement and consistency in implementing these laws can be uneven, leading to uncertainty and diminished efficacy. The absence of specialized alternative dispute resolution mechanisms tailored to the specific needs of MSMEs further compounds the issue. Addressing these shortcomings is imperative; it requires simplifying legal procedures, providing legal education and support, fostering accessible alternative dispute resolution mechanisms, and periodically updating the legal framework to adapt to evolving economic conditions and business practices. By doing so, Uganda can significantly enhance its support for MSMEs grappling with financial distress, ultimately promoting the sector's resilience and growth.

5.7 Comparison of Predictive Methods

Logistic Regression is a widely used method due to its simplicity and interpretability. It's particularly effective when the relationship between predictors and financial distress is linear or follows a straightforward pattern. However, it may struggle with capturing complex, non-linear relationships.

Machine Learning Algorithms like Random Forests and Neural Networks offer higher predictive accuracy and can handle complex interactions among variables. They excel when dealing with large and diverse datasets. Still, they tend to be less interpretable, which can be a drawback when decision-makers need to understand the reasoning behind predictions.

The choice between these methods should consider the specific characteristics of the MSME and the available data. Logistic Regression may be more suitable for small businesses with limited data and straightforward relationships between variables. In contrast, Machine Learning Algorithms can be beneficial for larger, data-rich MSMEs where predictive accuracy is paramount. However, the complexity and interpretability trade-off should be carefully considered in each context. Furthermore, model performance should be continually monitored and re-evaluated as the business environment evolves to ensure the chosen method remains effective.

5.8 Integration of Findings

The integration of findings in my research illustrates the intricate interplay between the causes of financial distress, predictive models, and recommendations for Micro, Small, and Medium Enterprises (MSMEs) in Uganda. By examining these components holistically, I revealed how they are interconnected and mutually reinforcing in addressing financial distress.

5.8.1 Identification of Causes of Financial Distress: My research identified both internal and external causes of financial distress. Internal factors such as mismanagement and operational inefficiencies can often be mitigated through improved financial management practices.

5.8.2 Predictive Models for Early Warning Signs: I found that predictive models, particularly Z-score model, can effectively identify early warning signs of financial distress. These models rely on a range of variables, including financial ratios, cash flow patterns, and operational metrics, which encompass factors related to mismanagement and operational inefficiencies.

5.8.3 Recommendations for MSMEs: My recommendations are directly informed by the causes of financial distress and the predictive models' outputs. For instance, I advised MSMEs to prioritize budgeting and financial planning to counteract mismanagement issues. Effective cash flow management was recommended to address liquidity challenges that may arise from operational inefficiencies.

5.8.4 Interconnectedness: The interconnectedness becomes evident as my recommendations addressed specific areas of financial management that were prone to mismanagement and operational issues. By improving budgeting and cash flow management, MSMEs can mitigate the impact of these internal factors, making them less susceptible to financial distress. Simultaneously, predictive models serve as early warning systems, helping MSMEs identify when these internal issues are on the horizon.