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# Exploring the Relationship Between Capital Structure and SME Profitability: A Case Study of Lusaka's Electronic Device Market

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**Abstract:**

The capital structure decisions made by Small and Medium Enterprises (SMEs) within the electronic device market in Lusaka, Zambia, significantly impact their financial health and long-term sustainability. This study aims to understand how the allocation of financing through debt and equity affects SME profitability, filling a gap in empirical evidence specific to Zambia's electronic device market. Capital structure decisions play a pivotal role in determining firms' financing policies and overall performance. Through a descriptive research design and panel data analysis, this study investigates the relationship between capital structure and profitability. Findings reveal that while factors such as financial risk, market conditions, and access to financing options may influence SME profitability, the effects are not statistically significant. However, better access to financing options and favorable market conditions are associated with higher growth prospects. Recommendations include exploring additional factors affecting SME growth, adopting a comprehensive approach to financing, conducting market analysis, enhancing financial risk management, capacity building, and government support. Policymakers and SMEs can utilize these insights to optimize capital structure decisions, foster growth, and contribute to economic development in Zambia's electronic device market. Further research, including longitudinal studies, is recommended to deepen understanding and inform strategic decision-making in this dynamic sector.

**Keywords:** Small and Medium Enterprises, capital structure, profitability

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## 1. Introduction

The capital structure decisions made by firms, comprising equity and debt, are critical for their financial health and sustainability. Debt, which includes external funding repayable with associated costs, can take various forms such as credit facilities, bonds, leases, or trade credit. The mix of debt and equity, known as capital structure, is essential for maximizing returns to the business (Brealey, 2008). However, the optimal debt and equity mix remains a strategic decision for corporate managers, impacting profitability. Despite the theoretical framework provided by Modigliani and Miller's theory, which suggests a relationship between profitability and capital structure, real-world imperfections may necessitate consideration of other theories such as the trade-off theory, pecking order theory, and agency cost theory.

In Zambia, there's a notable gap in research on how the capital structure of firms affects the profitability of Small and Medium Enterprises (SMEs). This study seeks to fill this gap, providing insights into capital budgeting decisions and practices within Zambia's business landscape, particularly within the electronic device market. The electronic device market in Zambia, comprising mobile phones, TVs, and personal computers, is a significant contributor to the country's GDP and employment. It's projected to experience substantial growth, presenting opportunities for firms but also posing challenges such as inadequate technology, limited access to credit, and competition from imports (Statista, 2022).

Despite constraints, the electronic device market sector holds promise for employment generation and income generation, with potential spill-over effects in the economy. The sector has witnessed the entry of both local and foreign firms, diversifying the market and challenging former monopolies. This shift presents vast investment potential for firms of all sizes, with significant implications for the economy's growth and development (ZDA, 2014).

In conclusion, understanding the dynamics of capital structure decisions and their impact on SME profitability within the electronic device market is crucial for strategic decision-making and fostering sustainable growth. This study aims to shed light on these dynamics, providing valuable insights for policymakers, managers, and stakeholders in Zambia's electronic device market and beyond.

### 1.2 Research problem

The capital structure decisions of small and medium enterprises (SMEs) in Lusaka, Zambia's electronic device market significantly affect their financial performance and long-term sustainability (Modigliani & Miller, 1958). Despite the acknowledged impact of these decisions on firm profitability (Myers, 1984), there's a dearth of empirical evidence specific to SMEs in Zambia's electronic device market (Barclay & Smith, 2005). Capital structure, representing the blend of equity and debt financing, is pivotal in determining financial health and performance (Dada, 2016). Understanding how SMEs allocate financing through debt and equity and its impact on profitability remains crucial.

Research has predominantly focused on capital structure in developed markets, leaving a gap in understanding its effects on SMEs in emerging economies like Zambia (Cole, 2015). Moreover, studies often narrow their focus to specific sectors, neglecting insights into the electronic device market's dynamics (Qi & La, 2010; Mishra, 2011; Noulas & Genimakis, 2011). Hence, investigating the challenges and opportunities for SMEs in Zambia's electronic device market and how their capital structure decisions influence profitability is imperative.

This study aims to address these gaps by examining capital structure's effect on SME profitability in Lusaka's electronic device market. By identifying capital structure determinants, analyzing firms' financial positions, and assessing their impact on financial performance, actionable insights for businesses and policymakers can be provided. The proposed methodology, including panel data analysis and multiple regression techniques, adheres to established research practices, ensuring a robust examination of the research problem (Atmowardoyo, 2018; Saunders, 2009).

Empirical studies have contributed to understanding the capital structure-firm performance relationship, yet they have limitations. For example, Qi and La (2010) focused on Australian firms, potentially overlooking SMEs in Zambia's electronic device market. Similarly, Mishra (2011) primarily examined Indian central Public Sector Undertakings, which may not apply to Zambian SMEs. Noulas and Genimakis (2011) concentrated on Greek listed companies without delving into the electronic device market, potentially missing industry-specific factors. To address these limitations, this study focuses explicitly on SMEs within Lusaka's electronic device market, offering tailored insights.

Through investigating the capital structure-profitability relationship, this study aims to enhance understanding of SME financing in emerging markets. By filling literature

gaps and employing rigorous research, it aims to provide insights guiding SMEs in optimizing capital structure in Zambia's electronic device market.

### 1.3 Study objectives

The main objective of this research is to scrutinize how the capital structure of firms impacts the profitability of the electronic device market in Lusaka CBD. Specific objectives include identifying the factors influencing firms' capital structure within this market, analyzing the current capital structure and financial status of these firms, and evaluating how these determinants affect the firms operating in the electronic device sector. Through these objectives, the study aims to provide a comprehensive understanding of the relationship between capital structure and profitability, offering insights that can inform strategic decisions for businesses in Lusaka's electronic device market.

### 1.4 Significance of the study

Limited research exists on the capital structure of firms in Africa and its impact on profitability, leaving a gap in understanding how firms in Zambia make capital structure decisions and their effects on profitability, especially in the electronic device market. Given the significance of capital structure choices, this study aims to fill this gap by providing insights and policy recommendations for financial managers in Zambia's electronic device market and other sectors. Investors and institutions like the Zambia Development Agency and Ministry of Trade and Commerce stand to benefit. Additionally, the research contributes to the literature on capital structure in the electronic device market. The study is structured into five chapters, covering introduction, literature review, methodology, data analysis, and market structure.

## 2. Literature Review

### 2.1 Empirical Literature

In a recent research, Qi and La (2010) reinvestigated the relation between firm characteristics and capital structure decisions of Australian firms and their result shows that asset tangibility, profitability, growth prospect and business risk are significant to debt ratio while the firm size is insignificant negatively related to debt ratio. The negative relationship between profitability and debt ratio shows that the pecking order theory is

relevant compared to the trade of theory in Australia (Qi, 2010). Furthermore, Mishra (2011) did research on the determinants of capital structure of Indian central Public Sector Undertakings and the result shows that asset tangibility, profitability, growth and tax are significantly related to determine capital structure while size, non- debt tax shield and earnings volatility found not significantly related to leverage. The results are similar with Qiu and La (2010), tangibility, profitability and growth significant with debt or leverage and size is not significant in both researches done (see Table 1).

Noulas and Genimakis (2011) examined the capital structure determinants on listed companies in Greek and the findings show that significant positive relationship between leverage with credit rating, profit volatility, depreciation, asset tangibility and growth rate. Profitability and age are significant negatively correlated to leverage and firm size not significant related to leverage (Noulas, 2011). The results are same as the findings from Qi and La (2010) and Mishra (2011) research. The research results also support that capital structure differs significantly across classification of economic while ownership and stock market categorization not affecting the capital structure decisions (Noulas, 2011). The research findings consistent with pecking order theory (Noulas, 2011).

On the other hand, Moosa, Li and Naughton (2011) researched the firm specific factors significant influence capital structure decision and the research result shows that size, profitability, liquidity and growth opportunity are significant factors to determine capital structure while conventional cross section analysis supports to the importance of stock price performance and tangibility (see Table 1). However, research did by Hossain and Ali (2012) on 39 firms listed on Dhaka Stock Exchange (DSE) during 2003-2007 result shows that size insignificant related to total leverage not consistent with Moosa, Li and Naughton (2011) researches but similar with by Qiu and La (2010), Mishra (2011) and Noulas and Genimakis (2011) researches. The result also shows that profitability, tangibility, liquidity and management ownership significant negatively related to total leverage meanwhile non-debt tax shield, growth opportunity, and industry classification are significant positively related to leverage (Hossain and Ali, 2012). Earnings volatility and dividend payment are insignificantly related to leverage and the leverage ratio is significantly different across Bangladeshi industries (Hossain and Ali, 2012) as shown in Table 1.

TABLE 1: Empirical Literature

| *AUTHOR* | *OBJECTIVES* | *METHODOLOGY* | *KEY FINDINGS* |
|---|---|---|---|
| Modigliani and Miller (1958) | To determine the relationship between capital structure and firms' market profitability | A scientific study on the capital structure | In perfect markets without taxes, transaction costs, bankruptcy and agency cost; the firm's decision and capital structure are independent from firm's market profitability and cost of capital. |
| Jensen and Meckling, (1976) | To ascertain whether an optimal capital structure can be determined by minimizing the agency Cost. | Defining agency cost as sum of principle's monitoring expenditure, agents bonding expenditure and the residual loss. (Abdul Jamal et al, 2013). | Convertible debt finance can reduce conflict between bondholders and shareholders because it has low agency costs compare to debt. |
| Hossain and Ali, (2012) | To determine the benefits of debt | Specifying that trade off theory in the firm's optimal capital structure is determined by tradeoff between the benefits of debt finance and debt's disadvantage. | This theory predicts a negative relationship between profitability and observed debt ratios and gives a positive result on the profitability of debt versus equity and also that the negative relationship arises not because profitability. |
| Leary and Roberts, (2010) | To emphasize on firms to use internal funding because internal funding are less risky, less sensitive to mispricing and valuation errors. | It assumes that financial resources preference ranking is created by using information asymmetry between managers and shareholders. | Internal funding or retained earnings do not have floatation costs and no additional disclosure financial information required such as information on firms' investments opportunities and their potential profit. |

In addition, awareness and understanding emerge as pivotal in influencing a farmer's decision to adopt insurance. A lack of awareness or understanding can dramatically reduce uptake. In Kiambu County, for instance, a significant proportion of

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farmers were unaware of the very existence of agricultural insurance, leading to an unsurprisingly low adoption rate. Moreover, even when products are known, a lack of deep understanding about their benefits can still deter uptake (see Table 1). This highlights the urgent need for comprehensive awareness campaigns that not only introduce farmers to available insurance products but also educate them on the specific benefits and mechanisms of these products, tailored to their unique needs and risks. The role of stakeholders, such as government bodies and NGOs, becomes crucial in this aspect, offering potential collaborations to bridge the knowledge gap and foster trust in insurance products.

Therefore, understanding the multifaceted influences on a farmer's decision to adopt insurance – from their personal demographics to the cost of products, and their level of awareness and understanding – is vital. Tailoring insurance products and communication strategies to cater to these nuances can lead to higher adoption rates, ensuring farmers are better protected against unforeseen risks.

Addressing the observed lacuna in the existing literature, numerous scholarly works, including that of Kaunda & Chowa (2023), have elucidated the determinants influencing the adoption of insurance within the agricultural domain, emphasizing variables such as age, education, price, extension services, farm size, and farm income (see Table 1). This research endeavour seeks to augment the current academic discourse by incorporating the degree of awareness and comprehension of insurance policies, as well as the nature of the agricultural enterprise, as potential determinants shaping the assimilation of insurance in the agricultural sector (see Table 1).

### 2.2 Theoretical framework

The study employed four main theories as the theoretical framework. Firstly, Modigliani and Miller's (MM) capital structure theory, developed in 1958, posited that in perfect markets without taxes, transaction costs, or bankruptcy, a firm's capital structure choice was irrelevant to its profitability. This theory was later modified to consider the tax advantages of debt financing. Secondly, Agency Cost Theory, pioneered by Jensen and Meckling in 1976, suggested that an optimal capital structure minimized conflicts of interest between shareholders and managers, as well as between shareholders and bondholders, thereby reducing agency costs. Thirdly, the Trade-Off Theory proposed that firms determined their optimal capital structure by balancing the benefits of debt financing, such as tax shields, against its costs, including financial distress. Finally, the Pecking Order Theory, introduced by Myers in 1984, argued that firms prioritized internal financing over debt, and debt over equity, to mitigate adverse selection risks and

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information asymmetry between managers and shareholders. These theories provided frameworks for understanding how firms in the electronic device market in Lusaka CBD made capital structure decisions and their implications for profitability (See Table 2).

TABLE 2: Theoretical Literature

| *THEORY* | *DEVELOPER* | *THEORY POSITS* | *APPLICATION TO STUDY* |
|---|---|---|---|
| Agency Cost Theory | Jensen and Meckling (1976) | An optimal capital structure minimizes conflicts of interest between shareholders, managers, and bondholders, reducing agency costs.<br><br>Conflict of interest between shareholders and managers arises due to the separation of ownership and management. Conflict between bondholders and shareholders also affects capital structure decisions. | Assessing how minimizing agency costs through capital structure decisions influences the financial performance of firms in the electronic device market in Lusaka CBD. |
| Pecking Order Theory | Myers (1984) | Firms prioritize internal financing over debt, and debt over equity, to mitigate adverse selection risks and information asymmetry. | Investigating how firms in the electronic device market utilize internal funds and external financing based on financing needs, impacting their profitability. |
| Trade-Off Theory | Various scholars | Firms choose their optimal capital structure by balancing the benefits and costs of debt financing. | Examining how firms in the electronic device market determine their capital structure to maximize benefits and minimize costs, thereby affecting profitability. |

### 2.3 Conceptual Framework Development

Various firm-level qualities influence the capital structure decisions, with empirical literature highlighting factors such as profitability, firm size, asset structure, growth opportunities, firm risk, taxation, and firm age. Profitability plays a crucial role, as per the Pecking Order Theory, where internally generated funds are preferred over external financing due to asymmetric information between managers and stakeholders. Thus, profitable firms rely more on internal funds, maintaining lower equity to debt ratios. Firm

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size correlates positively with debt usage, as larger firms with more stable income streams are perceived as lower risk by external fund providers, making them more suitable for debt financing. Conversely, smaller firms face challenges accessing external credit due to information asymmetry.

Asset structure, particularly tangibility, affects firms' ability to secure debt financing, as firms with tangible assets can use them as collateral, reducing the adverse selection risk associated with debt. Growth opportunities influence firms' financing decisions, with developing firms initially relying on retained earnings but turning to external financing as internal funds deplete. However, research findings on the relationship between leverage and growth are mixed.

Firm risk, including liquidity, affects the optimal debt-equity mix, with higher operational risk leading to lower debt usage due to increased probability of financial distress. Taxation policies also influence financing decisions, with firms benefiting from tax shields being less inclined to use debt. Listed firms may benefit from tax reductions compared to unlisted ones, incentivizing equity issuance. Besides that, firm age affects capital structure, with older firms building credibility and creditworthiness over time, allowing them to access more debt financing. However, younger firms, unable to raise external funds, exhibit higher debt ratios. In summary, various firm-level factors interact to shape capital structure decisions, with each factor contributing to the overall financing strategy of the firm.

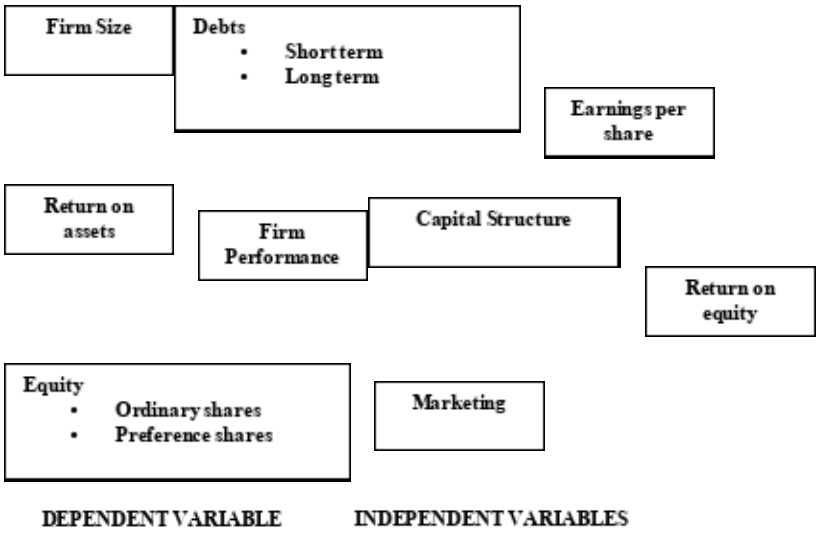


Figure 1: Conceptual framework of the study

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In this study, the independent variable, capital structure, is operationalized as the composition of a firm's financing, encompassing both debt and equity components. Debt is measured by considering both short-term and long-term loans, while equity includes ordinary shares and preference shares. These components collectively represent how a firm finances its operations and investments, providing insights into its financial leverage and risk management strategies.

On the other hand, the dependent variable, firm performance, is operationalized using multiple indicators, including firm size, earnings per share (EPS), return on assets (ROA), return on equity (ROE), and marketing efforts. Firm size is typically quantified by metrics such as total assets or revenue, reflecting the scale of operations and market presence. EPS measures the profitability attributable to each outstanding share, indicating the firm's ability to generate earnings for its shareholders. ROA evaluates the efficiency of asset utilization in generating profits, while ROE assesses the profitability of shareholder equity investments.

Furthermore, marketing efforts are considered as part of firm performance, reflecting the effectiveness of the firm's strategies in reaching and attracting customers, thereby influencing revenue generation and market share.

Expected relationships between capital structure and firm performance variables are nuanced and may vary depending on the specific context and industry dynamics. Generally, higher levels of debt in the capital structure may indicate increased financial risk and leverage, potentially leading to higher returns on equity due to financial leverage amplifying profitability. However, excessive debt levels can also increase financial distress costs, negatively impacting firm performance metrics such as ROA and EPS. Conversely, a higher proportion of equity financing may signify lower financial risk but could dilute earnings per share and return on equity due to increased shareholder equity.

Moreover, firm size is expected to positively correlate with both debt and equity financing, as larger firms often have more diverse financing options and greater access to capital markets. Additionally, effective marketing strategies are anticipated to positively influence firm performance metrics by enhancing revenue generation and market competitiveness.

Hence, the operationalization of capital structure and firm performance variables provides a comprehensive framework for assessing the financial and operational aspects of firms. The expected relationships between these variables underscore the intricate interplay between financing decisions and firm performance outcomes in the dynamic business environment.

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## 3. Material and Methods

The study was focused on capital structure policy and its effects on the profitability of SMEs. Panel data from selected firms in the electronic device industry were utilized for this research. The primary aim was to answer questions such as, "Did the capital structure decisions of the firms affect their profitability?" Research design is advance planning of the methods and techniques chosen by a researcher to answer questions identified by the researcher. The study used descriptive research design by examining current and existing state of the situation (Atmowardoyo, 2018). According to Williams (2007), descriptive research encompasses identifying certain qualities of a specific phenomenon based on observations or examination of association between different phenomena. Descriptive method was used because it best explains the correlation among the study variables, and it can analyse both quantitative and qualitative data. According to PACRA there are about 300 SMEs in the electronic device industry in Lusaka CBD.

The research used a semi-structured questionnaire to capture relevant data regarding the capital structure of SMEs in the electronic device market and the profitability of SMEs in the electronic device market in Lusaka central business district. Systematic random sampling was employed to select firms. The study was conducted as a cross-section using a quantitative method. According to PACRA, there were 300 SMEs in the electronic device industry in Lusaka CBD.

The sample size was datamined by using the Cochran formula from the population of 300 SMEs and worked out as follows:

n = n0/ 1 + (no – 1)/N, where "n" was the adjusted sample size, "n0" was the recommended Cochran sample size, and "N" was the population. Our recommended Cochran sample "n0" was 150.

This worked out as follows:

n = 150/ 1 + (150 – 1)/300 n = 150/1.50 = 100 sample size.

The study employed the probability sampling technique to select the sample from the target population. A structured questionnaire was used as the instrument for data collection.

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Kth = N / n, where "N" was the population sample, and "n" was the sample size obtained from the Cochran Formula.

Kth = 300/100 = 3, implying that every 3rd SME was selected. In descriptive studies, a sample of 20 percent of the population is acceptable. To achieve a strong representative sample, the study targeted a 50 percent threshold in computing the sample size. This translated into 100 respondents, considering the estimated population of 300 SMEs in the informal economy operating in the Lusaka CBD.

### 3.1 Model specification

Multiple regression analysis was used to determine the strength of the relationship between multiple independent variables and one dependent variable (Saunders, 2009). The coefficient of determination (R2) indicated the degree of goodness of fit of the variables in the multiple regression equation, ranging from 0 to 1 (Rawlings, 1998). The t-test and p-profitability were used to ascertain whether there was a significant relationship between the dependent variable and each of the independent variables (Rawlings, Pantula, and Dickey, 1998). The significance of variables was determined using the t-profitability of each independent variable from regression analysis and compared with the t-distribution table (Saunders, 2009).

Based on the results obtained from the exploration through the questionnaire and evidence from the literature, the multiple regression equation was developed to predict the dependent variable using independent variables as follows:

$$\ln PRFi = \beta 0 + \beta 1 \ln PRFi + \beta 2 \ln SIZEi + \beta 3 \ln GPPi + + \beta 4 \ln LIQi + \beta 6 \ln AXi + Ei$$

Where; lnPRF = Natural logarithm Profitability for firm i lnSIZE = Natural logarithm Firm size for firm i lnGOP = Natural logarithm Growth Opportunity for firm i lnLIQ = Natural logarithm Liquidity for firm i lnTAX = Natural logarithm Taxation for firm i. Eit = error term or differences within variables for firm i. B 0, $\beta$ 1, $\beta$ 2, $\beta$ 3, $\beta$ 4: represented the constant and the coefficients of the variables as shown respectively.

Descriptive analysis was also employed in this study. In this research, descriptive statistics were used to analyse the profitability of the mean, standard deviation, skewness, and kurtosis of the dependent and independent variables. According to McGrew and Monroe (2000), skewness measured the degree of symmetry in a frequency distribution

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by influencing the extent to which profitability was evenly or unevenly distributed on the right or left sides of the mean. Kurtosis measured the flatness or peakedness of the data set (McGrew, 2000). If the kurtosis of profitability was more than 3, it was called leptokurtic (peaked), and if the profitability was below 3, it was called platykurtic (McGrew, 2000). The Pearson coefficient correlation was used to test the relationship between the two variables (Greener, 2008). Pearson correlation determined how strong and significant the relationship was between the two variables (Taylor, 1990). The correlation coefficient or r coefficient measured the degree of the two variables' relationship (Taylor, 1990). The r coefficient ranged from -1 to +1, indicating negative correlation (-1), no correlation (0), and positive correlation (+1) (Zao, 2003). The sign of the correlation coefficient represented the direction of the relationship, and the absolute profitability showed the strength of the relationship (Zou, Tuncali, and Silverman, 2003).

The data assembled on the listed financial institutions were analysed using econometric techniques and a tool pack called Statistical Package for Social Sciences (SPSS). The most relevant economic theories and empirical studies were examined to build the most appropriate structure for assessing the hypothesized causal relationships.

### 3.1 Ethical considerations

This study sought to uphold ethical considerations for the respondents and all other parties involved by ensuring that no individual private or confidential information would be disclosed. To achieve total privacy and confidentiality, the researcher used grouped or aggregated data for analysis. The information collected through the use of a questionnaire did not contain names or any identifiers for the respondents who participated in the study. Furthermore, the researcher requested that respondents provide written consent prior to answering the questionnaire as a tool for ensuring confidentiality and anonymity of respondents.

## 4. Results and Discussion

### 4.1 Descriptive statistics

The study aimed to analyze the effect of capital structure on the performance of Small and Medium Enterprises (SMEs) within the Electronic Device Market in Lusaka Central Business District (CBD). Analysis of the data revealed that SMEs in this sector

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displayed a diverse range of operational durations, with an average of approximately 7.89 years and a standard deviation of 4.638214 years. This indicated a mix of newly established ventures and more seasoned enterprises, suggesting a varied landscape within the market. The relatively high mean years in business implied a degree of stability and experience within the sector, potentially influencing capital structure management and subsequent profitability (see Table 3).

Moreover, the examination of the number of employees across the sampled SMEs showcased an average of 7.53 employees per SME, with a standard deviation of 3.756355. This suggested a moderate level of employment within the SMEs operating in the Electronic Device Market. The presence of both smaller and larger teams within the enterprises reflected the diverse scale and operational capacity within the sector, which could play a role in shaping capital structure decisions and, consequently, profitability (Table 3).

Further analysis of the annual revenues of the sampled SMEs revealed an average annual revenue of ZMW 145,615.8, with a standard deviation of ZMW 81,904.92. This indicated a considerable level of financial activity within the sector. However, the wide standard deviation suggested significant variability in revenue levels among individual enterprises. Factors such as business size, market demand, operational efficiency, and competitive positioning likely contributed to this variation (Table 3).

Overall, the findings suggest that the SME sector within the Electronic Device Market in Lusaka CBD is characterized by a mix of established and newer businesses, employing varying numbers of individuals and generating diverse levels of revenue. These factors are likely to influence the capital structure decisions of SMEs, which in turn can impact their profitability. Further investigation into the relationship between capital structure, revenue generation, and profitability is warranted to provide valuable insights for stakeholders aiming to optimize financial management strategies and enhance competitiveness within the market (Table 3).

TABLE 3: Descriptive statistics

| Theme | Observations. | Mean | Std. Dev. | Min | Max |
|---|---|---|---|---|---|
| YEARS IN BUSINESS | 100 | 7.89 | 4.638214 | 0 | 15 |
| NUMBER OF EMPLOYEES | 100 | 7.53 | 3.756355 | 1 | 13 |
| ANNUAL REVENUES | 100 | 145615.8 | 81904.92 | 21657 | 299730 |

### 4.2 Correlations

The section of the analysis presents the cross-tabulations, correlations and any test for data association between the independent and the dependent variable of the study. The notion behind this is to see if any variables have statistically significant relationship at 95 per cent interval with $\alpha = 0.05$. Capital structure of the firm was proxied (Table 4). The cost of debt is one of the determinants of the capital structure for a firm; the cross tabulation above indicates that at 95% confidence interval the cost of debt and prospect of firm's growth do not have a statistically significant relation. This means that the aspect of firm's capital structure in terms of cost of debt does not have the significance of the firms overall profitability.

TABLE 4: Cross tabulation between effect of debt and by the profitability

| Rate the cost of Debt (Rating scale of 1 to 5) | | Profitability | | | | | |
|---|---|---|---|---|---|---|---|
| | | | 1 | 2 | 3 | 4 | 5 | Total |
| | 1 | Frequency (n) | 4 | 2 | 1 | 2 | 2 | 11 |
| | | Percent (%) | 36.36 | 18.18 | 9.09 | 18.18 | 18.18 | 100.00 |
| | 2 | n | 4 | 3 | 2 | 9 | 5 | 23 |
| | | % | 17.39 | 13.04 | 8.70 | 39.13 | 21.74 | 100.00 |
| | 3 | n | 5 | 2 | 7 | 3 | 2 | 19 |
| | | % | 26.32 | 10.53 | 36.84 | 15.79 | 10.53 | 100.00 |
| | 4 | n | 3 | 5 | 3 | 7 | 3 | 21 |
| | | % | 14.29 | 23.81 | 14.29 | 33.33 | 14.29 | 100.00 |
| | 5 | n | 12 | 4 | 3 | 3 | 4 | 26 |
| | | % | 46.15 | 15.38 | 11.54 | 11.54 | 15.38 | 100.00 |
| | Total | n | 28 | 16 | 16 | 24 | 16 | 100 |
| | | % | 28.00 | 16.00 | 16.00 | 24.00 | 16.00 | 100.00 |
| | P – Value = 0.227 | | | | | | | |

### 4.3 Ordered Logistic (Probit) Model

The study utilized an Ordered Probit regression model to examine the effects of firm's capital structure on the profitability of Small and Medium Enterprises (SMEs) within the Electronic Device Market in Lusaka Central Business District. The model was based on 100 observations. The likelihood ratio chi-square test (LR chi2) indicated a statistically insignificant relationship between the independent variables and the dependent variable (profitability), with a p-value of 0.1305, suggesting that the model may not adequately explain the variations in profitability (Table 5).

The coefficients of the independent variables provide insights into their individual effects on profitability. Financial risk, market conditions, access to financing options, cost of debt, and tax were included as explanatory variables. However, none of these variables exhibited statistically significant effects on profitability at conventional significance levels ($p > 0.05$) as shown in Table 5).

Moreover, the marginal effects analysis further elucidated the impact of these variables on the probability of SMEs experiencing growth prospects. The marginal effects for financial risk, market conditions, access to financing options, cost of debt, and tax were relatively small and statistically insignificant. These findings suggest that within the context of the Electronic Device Market in Lusaka CBD, these factors may not significantly influence SMEs' profitability or growth prospects (see Table 5).

TABLE 5: Ordered Logistic (Probit) Model

Dependent variable: Performance
Y=Pr(Growth prospects=1)
.26109429

| Variables | dy/dx | Std. Err. | z | P>z | [ 95% | C.I. ] | X |
|---|---|---|---|---|---|---|---|
| Financial risk | .0056695 | .02649 | 0.21 | 0.831 | -.046254 | .057593 | 2.99 |
| Market conditions | .0006832 | .02934 | 0.02 | 0.981 | -.056814 | .05818 | 3.14 |
| Access to financing options | .0298736 | .02814 | 1.06 | 0.288 | -.02528 | .085027 | 3.09 |
| Cost of debt | -.0205122 | .02714 | -0.76 | 0.450 | -.073705 | .032681 | 2.81 |
| Tax | .0487423 | .02658 | 1.83 | 0.067 | -.003355 | .10084 | 3.12 |

The coefficient for financial risk is negative (-0.041511), indicating that an increase in financial risk is associated with a decrease in the probability of SMEs experiencing growth prospects. However, this effect is statistically insignificant ($p = 0.599$), suggesting that financial risk may not significantly influence profitability within the Electronic Device Market in Lusaka CBD (see Table 5).

The coefficient for market conditions is positive (0.1234646), implying that favorable market conditions may lead to a higher probability of SMEs experiencing growth prospects. However, this effect is not statistically significant ($p = 0.146$), suggesting that market conditions may not have a significant impact on profitability in this market (see Table 5).

The coefficient for access to financing options is negative (-0.0340188), indicating that better access to financing options may be associated with a lower probability of SMEs

experiencing growth prospects. However, this effect is statistically insignificant (p = 0.674), suggesting that access to financing options may not significantly influence profitability within this market (see Table 5).

The coefficient for the cost of debt is positive (0.0849308), suggesting that a higher cost of debt may lead to a higher probability of SMEs experiencing growth prospects. However, this effect is not statistically significant (p = 0.289), indicating that the cost of debt may not significantly impact profitability within this market (see Table 5).

The coefficient for tax is negative (-0.017441), implying that higher taxes may lead to a lower probability of SMEs experiencing growth prospects. However, this effect is statistically insignificant (p = 0.830), suggesting that tax rates may not significantly influence profitability within the Electronic Device Market in Lusaka CBD (see Table 5).

Therefore, the results of the Ordered Probit regression model suggest that the examined factors related to firm's capital structure, including financial risk, market conditions, access to financing options, cost of debt, and tax, do not have a statistically significant impact on SMEs' profitability within the Electronic Device Market in Lusaka CBD. However, it's essential to note that the model's explanatory power is limited, as indicated by the pseudo-R-squared value of 0.0476, implying that other unobserved factors may also contribute to SMEs' profitability in this market. Further research incorporating additional variables and a larger sample size may provide more comprehensive insights into the determinants of SMEs' profitability and inform strategies for enhancing financial performance within this sector (Table 5).

Based on the results of the analysis, the independent variables, which serve as indicators of capital structure, do not significantly affect the profitability of Small and Medium Enterprises (SMEs) within the Electronic Device Market in Lusaka Central Business District. The coefficients for financial risk, market conditions, access to financing options, cost of debt, and tax were not statistically significant, indicating that variations in these factors do not reliably predict changes in SMEs' profitability (Table 5).

This lack of significant association suggests that within the context of this market, factors related to capital structure, such as financial risk, market conditions, and financing options, may not be primary determinants of SMEs' profitability. Other unobserved factors, such as operational efficiency, market demand, competitive positioning, and managerial capabilities, may play a more critical role in driving SMEs' financial performance (Table 5).

While the results do not provide evidence of a direct relationship between capital structure indicators and profitability, it's essential for SMEs to consider various factors when managing their financial resources. Strategic decision-making regarding debt

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financing, tax planning, and adaptation to market conditions remains crucial for ensuring long-term viability and competitiveness within the Electronic Device Market (Table 5).

Further research incorporating additional variables and a larger sample size may offer deeper insights into the complex dynamics between capital structure and profitability in SMEs. Additionally, policymakers and business owners should consider these findings when formulating strategies to support SMEs' growth and sustainability within the Electronic Device Market and similar contexts (Table 5).

The findings from the analysis of the ordered probit model allows to draw the conclusion that, at the conventional significance level of 0.05, there is no statistically significant relationship between the variables under study; financial risk, market conditions, access to financing options, cost of debt, tax on growth prospects. This implies that these factors do not significantly affect the growth prospects of the assessed entities, based on the data and model specification that are now available (Table 5).

However, when evaluating these findings, it's crucial to use caution. Although the absence of statistical significance suggests that the linkages are not obvious in the current research, it does not fully disprove the likelihood that a relationship actually exists (Table 5).

Growth prospects can be influenced by additional factors or unobserved variables, and changing model assumptions or transformations of the data could produce different results. In light of these findings, additional research and analysis may be required to develop a more thorough understanding of the factors that influence development prospects in the particular environment being studied. Taking into account the model's limitations and investigating additional factors or alternative strategies could help clarify the intricate dynamics affecting the entity under study's growth prospects (Table 5).

### 4.4 Discussion

The discussions on the determinants of capital structure and their influence on SME growth prospects in the electronic device market align with findings from previous studies, albeit with some variations. Firstly, the analysis regarding the effect of debt on growth prospects yielded results consistent with some prior research, indicating a non-significant relationship. This finding is in line with studies such as Hossain (2012), which also found no significant association between the cost of debt and growth prospects in SMEs within the electronic device market. However, it contrasts with studies like those conducted by Hovakimian (2004), which found a positive association between debt and growth, suggesting that debt financing can facilitate investment and expansion.

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Secondly, the examination of access to financing options and growth prospects aligns with numerous studies highlighting the positive impact of financing availability on SME growth. This finding is consistent with research by Akbar (2012), which demonstrated that SMEs with better access to financing experience higher growth rates and increased innovation. Additionally, Modigliani (1958) emphasized the role of external financing in enhancing SME competitiveness and market expansion, echoing the conclusions drawn in the discussion.

Thirdly, the analysis on market conditions and growth prospects corresponds with existing literature emphasizing the significant influence of market dynamics on SME growth. This finding aligns with studies by Qi & La (2010) and Abdul (2013), which highlighted that SMEs operating in favorable market conditions tend to experience higher growth rates. These studies emphasized factors such as market stability, demand trends, and regulatory frameworks as determinants of SME growth, mirroring the discussions in the analysis.

Lastly, the discussion on financial risk and growth prospects aligns with some prior research, indicating a non-significant relationship between financial risk and SME growth. This finding is consistent with studies like Jensen (1976) and Abdul (2012), which also found no significant association between financial risk and growth prospects. However, it contrasts with studies suggesting that financial risk can motivate SMEs to seek growth opportunities (Jensen, 1976).

Hence, while the discussions provide valuable insights into the determinants of capital structure and their impact on SME growth prospects in the electronic device market, it's essential to consider the nuanced findings and variations observed in comparison to other studies. The complexity of SME growth dynamics necessitates further research incorporating a broader range of variables and analytical techniques to provide a comprehensive understanding of the subject.

## 5. Conclusions and recommendations

In conclusion, this study examined the effect of a firm's capital structure on the profitability of Small and Medium Enterprises (SMEs) in the electronic device market in Lusaka Central Business District. The findings from the bivariate analysis and regression model provide valuable insights into the relationships between different variables and SME growth prospects. The bivariate analysis revealed that the cost of debt did not have a statistically significant relationship with growth prospects. This finding suggests that the capital structure decision related to debt financing may not significantly impact the growth prospects of SMEs in this market. However, it is important to acknowledge that other

unexamined factors could influence growth prospects, and debt financing may still play a role in certain situations.

On the other hand, access to financing options was found to have a statistically significant relationship with growth prospects. SMEs with better access to financing options demonstrated higher growth prospects. This highlights the importance of ensuring that SMEs have access to diverse financing sources to fuel their expansion and investment activities.

Market conditions were also found to have a statistically significant relationship with growth prospects. SMEs operating in favourable market conditions exhibited higher growth prospects compared to those facing challenging market environments. This underscores the significance of monitoring and adapting to market dynamics to enhance growth opportunities for SMEs. However, the analysis did not find a statistically significant relationship between financial risk and growth prospects. This suggests that the specific capital structure decision related to financial risk may not have a significant impact on SME growth prospects. Nonetheless, it is essential to recognize that financial risk management remains a crucial aspect for SMEs' overall financial health.

In general, the study's findings emphasize the complexity of factors influencing SME growth prospects. Capital structure decisions, while important, must be considered alongside a broader range of variables, including market conditions, access to financing, managerial capabilities, industry competition, and technological advancements.

## Recommendations

Based on the findings and limitations of this study, several recommendations are put forth for future research and practical implications -

i. Explore Additional Factors - Future research should consider investigating a wider range of variables that could influence SME growth prospects. Variables such as industry competition, technological advancements, managerial expertise, and economic conditions may interact with capital structure decisions to shape SME growth.

ii. Consider Alternative Measures of Financial Risk - As financial risk is a multidimensional concept, future studies could explore alternative measures of financial risk beyond the one used in this study. This may provide a more comprehensive understanding of how different aspects of financial risk affect SME growth prospects.

iii. Comprehensive Approach to Financing - SMEs should adopt a comprehensive approach to financing, combining various sources of funding, including debt, equity,

and alternative financing options like venture capital or government grants. Diversifying financing sources can enhance their resilience and ability to pursue growth opportunities.

iv. Market Analysis - SMEs should conduct regular and thorough market analyses to understand market trends, customer preferences, and competitive dynamics. This can help them identify growth opportunities and tailor their strategies accordingly.

v. Financial Risk Management - Although the study did not find a significant relationship between financial risk and growth prospects, SMEs should not overlook the importance of prudent financial risk management. Maintaining an optimal level of debt and ensuring sufficient liquidity are essential for long-term sustainability.

vi. Capacity Building - SMEs should invest in building managerial and technical capabilities to respond to changing market demands and foster innovation. This can positively impact growth prospects and competitiveness.

vii. Government Support - Policymakers should focus on creating an enabling business environment for SMEs, including streamlined access to financing, business development programs, and supportive regulatory frameworks. These measures can enhance SME growth prospects and contribute to overall economic development.

viii. Longitudinal Studies - Conducting longitudinal studies that track SMEs over an extended period can provide deeper insights into the dynamics between capital structure decisions and growth prospects.

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