

## CAPITAL STRUCTURE AND PROFITABILITY OF COMMERCIAL STATE CORPORATIONS IN KENYA

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### Abstract

Commercial state corporations play a crucial role in national growth and in building the state's technical capabilities and capacities. In Kenya, many commercial state corporations have raised capital through debt financing and equity capital. However, despite obtaining funds from these sources, their performance has been suboptimal, as evidenced by decreasing profitability over the past five years. The general objective of this study was to investigate the effect of capital structure on the profitability of commercial state corporations in Kenya. The study was anchored in trade-off theory, agency theory, and the pecking order theory. Secondary data covering 10 years (2011-2021) was gathered from the Office of the Auditor General's website and individual companies' annual reports, and past studies in the area were also reviewed. The study established that equity capital has a positive and significant effect on profitability ( $\beta = 0.904$ ,  $p < 0.05$ ) of commercial state corporations in Kenya. Additionally, short-term debt was found to have a significant negative influence on profitability ( $\beta = -0.737$ ,  $p < 0.05$ ), while long-term debt showed a significant positive effect on profitability ( $\beta = 0.402$ ,  $p < 0.05$ ). The study concludes that equity capital and long-term debt positively impact the profitability of commercial state corporations, while short-term debt negatively affects profitability. Based on these findings, the study recommends that management utilize equity capital to fund operations, as equity owners can consistently monitor and influence managerial decisions, ensuring the proper allocation and utilization of resources. Furthermore, commercial state corporations should avoid short-term debt due to its high-interest rates and should instead use long-term debt to fund investments with longer repayment periods.

**Key Words:** *Long Term Debt, Short term debt, Equity capital, Profitability, Commercial State Corporations*

## 1.0 Introduction

The main objective of the firms is to maximize profits and at the same time minimize its costs, when companies search about resources to finance its investments; they take this objective in consideration. The main sources that firms could use to provide the necessary finance are the internal finance which is equity and the external finance which is debt, most companies use a mix between equity and debt which form the capital structure. In numerous companies, finance managers have advocated the use of diverse capital structures to increase their companies' profitability (Singh & Bagga, 2019). Internal money, debt and equity are three key sources of funding for commercial state corporations. According to the pecking order principle, a company should prefer employing internal financing to support its activities. Internal financing involves the use of a company's own resources to finance its operations, growth, and investments, without relying on external sources of funding. Firms can use debt financing to support their activities if internal financing is not available. The issuance of equity should be the last option for financing a company's activities. A company can therefore finance its activities via internal resources, debt, or stock.

In the United States, Brigitta (2017) indicated that despite operating in the same business environment and utilizing a similar capital structure, state-owned enterprises (SOEs) in the United States, are less efficient and have lower profitability compared to private corporations. In Japan, Nguyet (2019) argued that the use of long-term debt and equity capital had a significant effect on state-owned enterprises. Further, the World Bank (2015) report indicates that while there are commercial state corporations in Africa that have been performing well financially in terms of meeting their financial obligations and profitability, most of them have been making losses and experiencing decrease in their profitability.

In Ghana, Prempeh, Nsiah and Sekyere (2016) indicated that there exists a positive relationship between capital structure, in terms of long term debt, short term debt and equity capital, and Profitability of state owned enterprises. In Kenya, Ngure, Muema and Mutea (2018) indicates that while the use long term debt influences the Profitability of commercial state corporations positively, short term debt had a negative effect on Profitability. Similarly, Githaiga and Kabiru (2015) observed that capital structure measured using equity capital and long term debt had a positive and significant effect on Profitability of commercial state corporations. This study therefore seeks to investigate the effect of capital structure on the Profitability of commercial state corporations in Kenya

## 1.2 Research Problem

Kenyan commercial state corporations experienced a notable decline in profitability between 2015 and 2020, as measured by Return on Assets (ROA) (Public Service Commission, 2020). During this period, various corporations sought capital through debt financing, internal sources, and equity capital to bolster their operations. Despite these efforts, profitability continued to decrease, raising concerns about the effectiveness of their capital structure strategies. Table 1.1 below illustrates the trends in ROA among commercial state corporations in Kenya:

**Table 1. 1: Return on Assets of Commercial State Corporations in Kenya**

<b>Year</b>	<b>Return on Assets</b>
2013	2.86
2014	4.61
2015	4.53
2016	4.32
2017	1.60
2018	3.07
2019	2.66
2020	0.69

The data reveals that ROA increased from 2.86% in 2013 to 4.61% in 2014, followed by a slight decline to 4.53% in 2015 and 4.32% in 2016. However, the decline became pronounced from 2017, dropping sharply to 1.60% and fluctuating thereafter, with a modest recovery to 3.07% in 2018 before decreasing again to 2.66% in 2019 and a mere 0.69% in 2020. These trends highlight significant challenges in financial performance, warranting further investigation. The decline in ROA from 2016 to 2020 can be attributed to several factors. Externally, the COVID-19 pandemic disrupted operations and strained financial structures, while the introduction of new policies, such as the Finance Act 2022, brought changes in taxation and revenue-raising measures that impacted financial performance. Internally, inefficiencies in financial management practices and strategic capital allocation could have contributed to the observed trends.

Previous research in Kenya has examined the relationship between capital structure and profitability, focusing on specific contexts. For instance, Cheruyot (2015) studied capital structure and profitability in quoted commercial banks; Omukaga (2017) explored this relationship in NSE-listed firms; and Mutegi (2016) assessed performance in NSE-listed companies. However, these studies were limited in scope, focusing on distinct industries and measuring capital structure using metrics such as the debt-equity ratio (DER) and debt ratio. Additionally, these studies covered earlier periods, with Cheruyot (2015) focusing on 2009–2013, Omukaga (2017) on 2010–2016, and Mutegi (2016) on 2011–2015. However, significant policy changes and external factors between 2016 and 2022, such as the Finance Act 2022 and the COVID-19 pandemic, have reshaped the financial landscape, influencing the capital structure and profitability of commercial state corporations.

Given the identified decline in profitability, this study seeks to explore the role of capital structure—comprising short-term debt, long-term debt, and equity capital—in influencing the financial performance of Kenyan commercial state corporations. Specifically, the study will analyze these trends between 2011 and 2021 to provide actionable insights into optimizing capital structure for improved profitability.

### **1.3 Objectives of the Study**

The general objective was to investigate the effect of capital structure on the profitability of commercial state corporations in Kenya.

The study was guided by the following specific objectives:

- i. To determine effect of short term debt on Profitability of commercial state corporations in Kenya
- ii. To determine effect of long term debt on Profitability of commercial state corporations in Kenya
- iii. To establish effect of equity capital on Profitability of commercial state corporations in Kenya

## 1.4 Research Hypotheses

Below are null hypotheses:

**H<sub>01</sub>:** Short term debt has no statistically significant effect on Profitability of commercial state corporations in Kenya.

**H<sub>02</sub>:** Long term debt has no statistically significant effect on Profitability of commercial state corporations in Kenya.

**H<sub>03</sub>:** Equity capital has no statistically significant effect on profitability of commercial state corporations in Kenya.

## 2.0 Literature Review

### 2.2 Theoretical Literature Review

A research study's theory is supported or held in place by a theoretical framework. Theoretical explanations as to why research problem occurs are introduced and described in theoretical framework. This study was anchored on trade-off theory (TOT), agency theory and Pecking Order Theory.

#### 2.2.1 The Trade-off Theory

The Trade-off Theory (TOT), coined in 1973 by Litzenberge and Kraus, is based on the notion that businesses decide how much debt and equity financing to utilize by weighing benefits and drawbacks. The theory weighs bankruptcy costs against the debt tax savings benefits. Frequently, agency costs are incorporated into this balance. Additionally, this theory explains the tendency of organizations to fund operations partly with debt and equity (Ngugi & Muturi, 2021). The trade-off theory assumes that there is a tax advantage to using debt financing because interest payments on debt are tax-deductible, thereby reducing tax liability and increasing after-tax profits. It also assumes there are costs associated with financial distress and bankruptcy, such as legal fees, lost customers, and lower employee morale (Wambua & Njuguna, 2020). As a result, a company may hesitate to use excessive debt financing, which could increase bankruptcy risk. Moreover, the theory suggests that the best leverage offers a trade-off between liquidation expenses and the tax advantages of debt. Further, it acknowledges the tax benefits of interest payments (Kamau et al., 2023).

Debt capital offers advantages, including tax exemptions, but excessive debt levels in the capital structure can lead to liquidation and agency costs. Agency costs arise from conflicts of interest between stakeholders and a lack of knowledge (Mburu & Gichure, 2022). Incorporating agency cost into TOT demonstrates how a company chooses its ideal capital structure by weighing debt benefits against the risks of financial difficulty. This study used the trade-off theory to describe how commercial state corporations weigh the costs and benefits of deploying different amounts of debt and equity financing and how these choices impact profitability. When determining the amount of debt and equity to employ for funding, a corporation maximizing value focuses on this trade-off. According to this theory, the marginal gain from a rise in debt declines with increased debt, while the marginal cost rises.

### **2.2.2 Agency Theory**

Agency Theory, developed by Jensen and Meckling (1976), describes managers as agents and stakeholders as principals. It highlights two key disputes within a corporation: between management and shareholders, and between shareholders and creditors. Balancing the interests of agents and principals is necessary to overcome differing preferences for business activities and risk exposure. Due to information asymmetry, where agents and principals have unequal information (with principals often at a disadvantage), it becomes expensive and challenging for principals to monitor agent activities (Ndichu & Gathungu, 2021).

Managers are often tempted to maximize earnings for personal benefit at the expense of shareholders. Debt, however, provides stockholders with an incentive to make unwise investments. According to Otieno and Kariuki (2022), investment returns that exceed the face value of debt benefit owners. Conversely, shareholders can limit liability through withdrawal if ventures fail, leaving debt holders with diminished market value. Myers (2020) further highlights that shareholders may reject positive NPV projects near bankruptcy because their benefits accrue primarily to debt holders. Consequently, high debt levels may lead to rejecting valuable projects.

Agency theory was used in this study to show the influence of equity and debt capital on commercial state corporations' profitability. Debt payments affect shareholders positively and negatively. On the positive side, debt repayment forces managers to reduce overinvestment risk. On the downside, high-interest repayment costs may result in rejecting profitable ventures, exacerbating underinvestment issues. Thus, the pros and cons of debt are balanced to define capital structure.

### **2.2.3 Pecking Order Theory**

The Pecking Order Theory (POT), formulated by Myers and Majluf (1984), posits that managers prioritize funding sources for investment opportunities as follows: retained earnings, debt, and equity financing (Wachira & Njenga, 2021). Asymmetric information, where one party has more or better information than the other, results in transaction power differences. Managers often have a better understanding of their firm's prospects, performance, and risks than external stakeholders such as shareholders and creditors (Mwangi & Muriithi, 2022). External financing requires compensating for information disparity, making it costlier than internal financing.

The theory assumes managers prefer retained earnings to avoid the ownership dilution associated with issuing new shares (Kinyua et al., 2023). Internal finance is the least costly funding method compared to debt or equity financing, which incur transaction costs. Managers prefer debt over equity since debt is less expensive, signaling undervalued stock and confidence in productivity. Conversely, issuing equity signals overvaluation and attempts to raise cash by reducing outstanding shares. Pecking Order Theory was used in this study to demonstrate how commercial state corporations' management chooses among internal finance, debt, and equity and how these choices affect profitability. Most businesses prioritize retained earnings, followed by debt, and finally equity, to minimize costs associated with information asymmetry.

### **2.3 Empirical Literature Review**

This section explores the relationship between short-term debt, long-term debt, equity capital, and profitability, focusing on previous studies and their relevance to the context of Kenyan commercial state corporations.

#### **2.3.1 Short-Term Debt and Profitability**

Research examining the influence of short-term debt on profitability has produced mixed results, often shaped by the geographical and sectoral contexts of the studies. Baum, Talavera, and Schäfer (2016) investigated firms in Germany and the United States, revealing that reliance on short-term liabilities was associated with higher profitability in German companies compared to their American counterparts. While insightful, these findings are less applicable to Kenya due to differences in the legal frameworks and business environments between developed and developing economies.

In Uganda, Mugisha (2020) examined the impact of short-term debt on the profitability of SMEs in Buganda's rural areas. The study identified a significant inverse relationship between short-term debt and return on assets (ROA), suggesting that higher reliance on short-term debt negatively affects profitability. However, the rural SME context differs significantly from that of Kenyan commercial state corporations, limiting the applicability of these findings. Similarly, Ngure, Muema, and Mutea (2018) analyzed the effects of short-term debt on the financial performance of companies listed on the Nairobi Securities Exchange (NSE). Their results indicated that short-term debt had an insignificant impact on profitability. This contrast underscores the variability of short-term debt effects across different organizational and operational contexts. Closer to the Kenyan public sector, Nasieku and Susan (2016) found that short-term debt financing significantly influenced the profitability of commercial banks. These findings highlight the role of short-term loans in meeting immediate financial needs without long-term commitments. However, commercial banks differ from commercial state corporations in terms of financial structures and operational mandates.

Similarly, Ndambiri, Karuma, and Oluoch (2018) reported a significant relationship between short-term debt and profitability in private manufacturing firms listed on the NSE. While informative, manufacturing firms operate under distinct business models, further emphasizing the need for sector-specific research. The varied findings from these studies highlight critical gaps in the understanding of how short-term debt influences the profitability of Kenyan

commercial state corporations. This study seeks to address these gaps by focusing on a unique context that combines public sector governance with commercial objectives.

### **2.3.2 Long-Term Debt and Profitability**

The relationship between long-term debt and profitability has been widely studied, but findings often vary based on regional and sectoral differences. Mohammad, Ayrin, and Umme (2020) investigated firms in Bangladesh and found a significant inverse relationship between long-term debt and profitability, as measured by return on equity (ROE), ROA, and gross margins. Despite these findings, the distinct political, economic, and regulatory conditions in Kenya necessitate caution in applying these results locally. In Uganda, Mulema (2019) explored the role of long-term financing in SME development, employing both quantitative and qualitative approaches. The study revealed a positive relationship between long-term debt and financial performance, with long-term financing emerging as a key predictor of SME development. While the findings offer valuable insights, SMEs in Uganda differ from Kenyan commercial state corporations in terms of financial needs, competitiveness, and regulatory environments.

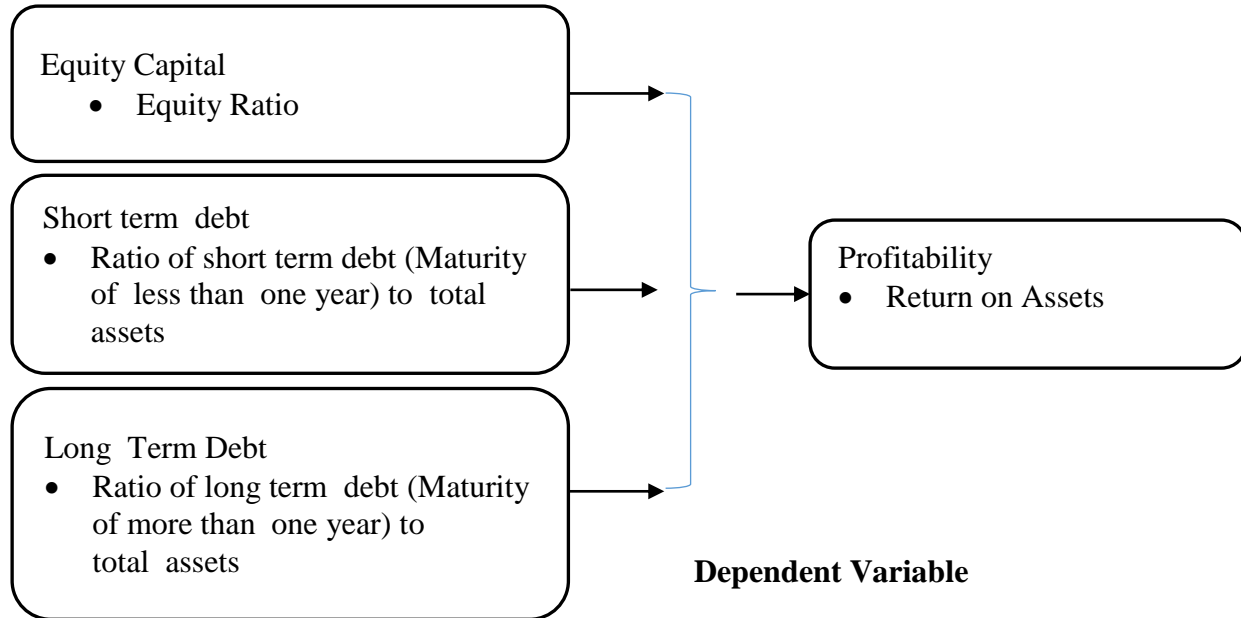
In Kenya, Githaiga and Kabiru (2015) evaluated the effects of long-term debt on SME performance in Eldoret, identifying an inverse relationship between long-term debt and profitability. The study highlighted challenges such as reduced liquidity and slower responses to market changes caused by high debt levels. However, its focus on SMEs limits its relevance to commercial state corporations, which operate on a larger scale and within a different regulatory framework. These studies underscore the need for localized research to examine the role of long-term debt in the profitability of Kenyan commercial state corporations. This study contributes to filling this gap by focusing on organizations that operate under unique financial and regulatory conditions.

### **2.3.3 Equity Capital and Profitability**

Equity capital plays a critical role in organizational profitability, as evidenced by several studies. Noor and Simiyu (2020) analyzed SMEs in Garissa County, finding a significant positive relationship between equity capital and profitability. However, the focus on SMEs with distinct organizational structures and goals limits the applicability of these findings to commercial state corporations. Similarly, Kimetto and Koech (2020) examined equity capital in NSE-listed firms, reporting a strong positive effect on profitability. Conducted between 2008 and 2013, the study used ROE as a performance measure, which differs from the ROA metric adopted in the current research. Additionally, the focus on private sector firms introduces contextual differences that reduce the direct applicability of the findings. In Embu, Njagi et al. (2017) assessed the influence of equity financing on SME performance, highlighting its role as a long-term funding option with minimal capital outflows. While valuable, the study's emphasis on SMEs in Embu Town overlooks the unique characteristics of commercial state corporations, such as their larger scale and public ownership. These findings illustrate a gap in understanding how equity capital affects profitability in the context of Kenyan commercial state corporations. By addressing this gap, the current study aims to provide insights that align with the unique financial and operational structures of these organizations.

### 2.4 Conceptual Framework

This refers to diagrammatic representation which aids in description of anticipated relationship between study variables. In this study, independent variables were short term debt, equity capital and long term debt while dependent variable was profitability.



**Figure 2.1: Conceptual Framework**

### 3.0 Research Methodology

This study employed secondary panel data to analyze the relationship between equity capital, short-term debt, long-term debt, and profitability (measured as ROA) of 26 commercial state corporations in Kenya from 2011 to 2021. Panel data combines observations across entities and time, offering insights into temporal and cross-sectional dynamics. An explanatory research design was adopted to establish causal relationships. Data were sourced from the Office of the Auditor General and annual reports, including variables such as shareholder equity, short-term and long-term debt, total assets, and ROA. The study utilized a panel regression model with assumptions of balanced data, minimal multicollinearity (tested using VIF), homoscedasticity (Breusch-Pagan test), and no autocorrelation (Wooldridge test). The Hausman test determined the suitability of fixed or random effects models. Analysis was conducted using STATA, with descriptive statistics, correlation analysis, and panel regression to estimate the relationship between variables. The functional model was:

$$ROA = f(EC, STD, LTD) \dots\dots\dots (3.1)$$

Panel regression model was;

$$ROA_{it} = \beta_0 + \beta_1 EC_{1it} + \beta_2 STD_{2it} + \beta_3 LTD_{3it} + \epsilon_{it} \dots\dots\dots (3.2)$$

Where:

$ROA_{it}$ : Return on assets for corporation  $i$  at time  $t$ ;

$Equity_{it}$ : Shareholder’s equity for corporation  $i$  at time  $t$ .

$STD_{it}$ : Short-term debt for corporation  $i$  at time  $t$ .

$LTD_{it}$ : Long-term debt for corporation  $i$  at time  $t$ .

$\epsilon_{it}$ : Error term accounting for unobserved heterogeneity.

### 4.0 Findings

#### 4.1 Descriptive Statistics of Profitability and Capital Structure of Commercial State Corporations in Kenya (2014-2021)

Table 4.1 presents the descriptive statistics for profitability and capital structure of commercial state corporations in Kenya over the period 2014-2021. The table provides key metrics including the mean, standard deviation, minimum, and maximum values for return on assets (ROA), short-term debt, long-term debt, and equity. These statistics offer a snapshot of the financial performance and capital structure composition of the corporations, shedding light on the variations in profitability and debt usage across the sector during the study period.

**Table 4.1: Descriptive Statistics of Profitability and Capital Structure of Commercial State Corporations in Kenya (2011-2021)**

Variable	Obs	Mean	Std.Dev	Min	Max
Return on assets	260	0.344	0.038	0.27	0.422
Short term debt	260	0.290	0.027	0.227	0.335
Long term debt	260	0.318	0.049	0.229	0.451
Equity	260	0.432	0.121	-0.021	0.931

Table 4.1 presents descriptive statistics for key variables, including profitability, short-term debt, long-term debt, and equity, for the period 2011-2021. The mean Return on Assets (ROA) of 0.344 suggests that, on average, the commercial state corporations in Kenya were relatively efficient in converting their investments into profits. The mean equity value indicates that for every Ksh 1 of common shareholders' equity, the corporations earned Ksh 0.432 in return, with a standard deviation of 0.121, reflecting varying profitability performance across the entities.

The capital structure of the corporations consisted of 31.8% long-term debt and 43.2% equity, showing a preference for equity financing. This is consistent with findings by Mwangi et al. (2014), who reported that Kenyan firms tend to use more equity than debt due to the high cost of

debt. However, this contrasts with Kodongo et al. (2014), who observed a greater reliance on debt, attributing it to the ease of acquiring commercial bank loans over obtaining equity.

The variation in borrowing levels, as indicated by the wide range in total debt utilization (0.009 - 1.591), suggests differing strategies and access to financing among the corporations. Some corporations had high debt levels, while others maintained modest debt ratios. The preference for short-term debt, which accounted for 31.8% of total debt, compared to 29% for long-term debt, may reflect the lower cost and more accessible nature of short-term financing. Additionally, the developing long-term debt market in Kenya, as noted by Maina & Ishmail (2014), may contribute to this preference.

In terms of equity financing, approximately 49.8% of the corporations' equity came from internal sources, such as retained earnings and reserves, aligning with the pecking order theory, which suggests firms prioritize internal funds over external sources. The high standard deviation of equity usage further underscores the disparity in how corporations finance their operations. On average, the corporations invested Ksh 0.423 to generate one shilling of revenue, indicating efficient capital utilization during the study period.

#### 4.2 Panel Regression Results for the Effect of Capital Structure on Profitability of Commercial State Corporations in Kenya

The research sought to establish the effect of capital structure on profitability of commercial state corporations in Kenya. The results are shown in Table 2.

**Table 2: Panel Regression Results for the Effect of Capital Structure on Profitability of Commercial State Corporations in Kenya**

Profitability	Coefficient	Std. Error	Z	P> z	Model
Long term debt	0.402	0.066	6.04	0.000	RE
Short term debt	0.737	0.227	3.24	0.001	
Equity	0.904	0.236	3.83	0.000	
-Cons	.244	.070	3.51	0.000	
<b>Statistics</b>	<b>Model 1</b>				
Wald chi2(4)	10.30				
Prob> chi2	0.0357				
R-Squared	0.7032				

In view of the results in Table 2, the estimated model is thus summarized as follows;

$$ROA = 0.244 + 0.904 IE - 0.737STD + 0.402LTD$$

The R-squared value of 0.7032 suggests that capital structure accounts for 70.32% of the variation in profitability among commercial state corporations in Kenya. The P-value of 0.0357 indicates that the model is statistically significant, as it is below the 0.05 threshold, confirming its suitability in predicting profitability. The Wald chi-squared statistic of 10.30, with a P-value below 0.05, suggests that the model coefficients are significantly different from zero. The results

further show that holding other factors constant, profitability would be 0.244. A unit increase in long-term debt results in a 0.402 increase in profitability, with a statistically significant P-value (less than 0.05). Similarly, a unit increase in short-term debt leads to a 0.737 decrease in profitability, which is also statistically significant. Lastly, a unit increase in equity capital leads to a 0.904 increase in profitability, with a P-value below 0.05, indicating a significant positive relationship between equity and profitability.

## **5.0 Conclusions and Recommendations**

### **5.1 Conclusions**

In conclusion, this study has successfully analyzed the effect of capital structure on the profitability of commercial state corporations in Kenya. The results indicate that both long-term debt and equity significantly impact profitability, with equity showing the strongest positive relationship. Specifically, the study found that an increase in equity capital leads to a notable increase in profitability, while long-term debt also contributes positively, albeit to a lesser extent. On the other hand, short-term debt negatively affects profitability, suggesting that higher reliance on short-term financing may undermine profitability in the long term.

The study also highlighted the considerable variations in capital structure across the corporations, with some entities being highly equity-financed while others leaned more on debt. The findings underscore the importance of a balanced capital structure to maximize profitability and sustainability. The findings contribute valuable insights to policy makers, corporate managers, and stakeholders in commercial state corporations, offering a deeper understanding of how strategic capital structure decisions can influence organizational performance. Future studies could expand on these findings by exploring the role of other factors, such as management practices and external economic conditions, in shaping the profitability of state-owned enterprises.

### **5.2 Recommendations**

#### **5.2.1 Recommendations for Policy**

Based on the findings, it is recommended that commercial state corporations in Kenya adopt a balanced capital structure, combining both equity and long-term debt, to optimize profitability while minimizing the risks associated with excessive short-term debt. Policymakers should facilitate access to long-term financing and create favorable conditions for internal equity financing, such as encouraging the reinvestment of profits. Additionally, clear debt management guidelines should be implemented to ensure strategic borrowing decisions. Transparency in capital structure decisions should be enhanced through mandatory disclosure, and capacity-building programs for executives should be introduced to improve financial decision-making and corporate governance.

#### **5.2.2 Recommendations for Practice**

For practice, commercial state corporations in Kenya should prioritize a well-structured capital framework, balancing equity and long-term debt to ensure sustainable profitability. Management

should focus on reducing dependency on short-term debt, given its potential to negatively impact profitability, and instead seek more stable long-term financing options. Corporations should adopt strategic financial planning to optimize the cost of capital, taking into account both the market conditions and their unique operational needs. Regular reviews of capital structure policies should be conducted to align with evolving market dynamics. Additionally, enhancing financial literacy and capacity among decision-makers is crucial to fostering sound capital structure decisions and improving overall corporate performance.

### **5.2.3 Recommendations for Further Research**

This study found that capital structure accounts for 70.32% of the profitability of commercial state corporations in Kenya. Given that a significant portion of profitability remains unexplained, future research should explore additional factors influencing the profitability of these corporations, such as management efficiency, government policies, and market competition. Further studies could also examine the impact of macroeconomic variables like inflation, exchange rates, and interest rates on corporate performance. Comparative studies between state-owned and private corporations could provide valuable insights into the differences in capital structure and profitability dynamics across different organizational types in Kenya.

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