

KWAME NKRUMAH UNIVERSITY OF SCIENCE AND TECHNOLOGY-KNUST

SCHOOL OF BUSINESS

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**THE EFFECTS OF LEVERAGING AND LIQUIDITY ON FINANCIAL
PERFORMANCE OF LISTED FIRMS IN THE GHANA STOCK EXCHANGE**

BY

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A thesis submitted to the Institute of Distance Learning

Kwame Nkrumah University of Science and Technology in

partial fulfilment of the requirement for a degree of

MASTER OF SCIENCE (ACCOUNTING AND FINANCE)

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INSTITUTE OF DISTANCE LEARNING



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DECLARATION

I hereby declare that this submission is my own work towards the Master of Science (Accounting and Finance) Degree and that, to the best of my knowledge, it contains no material previously published by another person or material which has been accepted for the award of any other degree at the University, except where due acknowledgement has been made in the test.

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DEDICATION

I dedicate this piece to God Almighty for his guidance, protection and grace throughout my program of study. I also dedicate this work to my family and friends.

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ACKNOWLEDGEMENT

I wish to thank God Almighty for His blessings and grace throughout my programs of study. I also want to acknowledge my project supervisor, Dr Kwasi Poku for his contributions towards the success of this work. To my co-workers and colleagues, and the entire Wormenor family, I say thank you all for your prayers and support throughout my program of study.

ABSTRACT

The main aim of the study is to assess the effect of leveraging and liquidity on financial performance of listed firms in the Ghana Stock Exchange. The research used the quantitative research design with focus on causal comparative research design. The study is rooted in the positivist philosophy while the study employed the quantitative research approach. The population of the study was all listed firms (42) in the Ghana Stock Exchange till date. The study however sampled data from 15 firms for 5 years (thus 2018 to 2022) from the financial statements of the sampled firms. Results were presented descriptively as well as inferentially using fixed and random effect panel regression models. However, Hausman's test was provided to justify a choice between the two models. The study concludes that while leverage (using debt to assets) can amplify gains for listed firms in the GSE, it (using debt to equity ratio) also increases the risk because the company must pay back the debt, regardless of its profitability. Liquidity, in isolation, however, does not exert any significant effect on financial performance of firms. The study further concludes that the interacting effect of leveraging and liquidity on financial performance of firms depends on the specific proxies used in measuring the variables. Thus, while the interactive effect of debt to asset ratio and liquidity exerts positive effects on return on assets, the same interactive effect exerts negative effects on return on equity. Equally, while the interactive effect of debt to liquidity ratio exerts negative effects on return on assets, its effects on return on equity remain insignificant.

The study recommends that listed firms in the Ghana Stock Exchange should implement a prudent debt management policy that ensures borrowed funds are used for productive purposes. The study further recommends that management of listed firms in the GSE should optimize working capital management to ensure smooth operations and reduce the need for excessive short-term borrowing.

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CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

The ability of an organization's management to utilise resources effectively to create enough income and be able to provide returns to the various stakeholders is known as financial performance or profitability (Saleh *et al.*, 2021). Every firm's growth and long-term survival depend on management's capacity to effectively and efficiently utilize its resources to yield optimal financial growth. Therefore, due to the effects that profitability and revenue growth has on private and state enterprises, financial consultants, brokers, creditors, analysts and firms board of directors have become very interested and concerned about their company's financial performance (Miroga and Shimenga, 2019; Supriati, Ramaditya and Wardhana, 2019; Saleh *et al.*, 2021). As such, determinants and influential factors of firm performance remain key in corporate investigations to aid policy recommendations (Zhongming *et al.*, 2020). Furthermore, with the aim of profit maximization, businesses establish a system for transferring risks and directing funds in the appropriate manner to stimulate their overall performance (Li *et al.*, 2020). The focus of financial success is on elements relating to financial reports which are directed towards the way businesses are financed including leveraging, equity and liquidity management. Argued differently, Saleh *et al.*, (2021), contended that empirical studies established that debt management, liquidity and assets management are significant in determining the financial performance of firms. Among the most essential elements of a business corporate decision primarily in terms of funding is the creation of the capital structure. In theory, a company's capital requirements can be met by the issuing of debt or capital directly, or through the share issuance. Each sort of capital has distinct qualities that set it apart from the others, as well as benefits and drawbacks (Saleh *et al.*, 2021).

Notwithstanding the above, researchers argued that making a choice between the varieties of capital structure while taking into consideration the link between earnings and risk is a challenging corporate decision that organizations must make (Prempeh, Sekyere and Addy, 2018). The management of a company's existing assets, liabilities, short-term debts, as well as the control of excess or deficient cash in the short term is called liquidity management (LeKim, Duvernay and Le Thanh, 2021). In order to maintain operational stability, liquidity necessitates withdrawing money that could be reinvested to make a profit. On the other hand, increasing working capital would reduce liquidity and might, whenever invested, raise rates of return (financial returns) (Prempeh, Sekyere and Addy, 2018; Zhongming *et al.*, 2020; Saleh *et al.*, 2021). The tendency of a company to utilize its resources to generate the most profits for its investors is referred to as leverage (Le-Kim, Duvernay and Le Thanh, 2021; Saleh *et al.*, 2021). Increase in leverage leads to higher returns and higher risks, whereas decreases in leverage lead to lower returns and lower risks (Le-Kim, Duvernay and Le Thanh, 2021). Leverage can be operating or financial leverage. Operating leverage refers to the degree to which a business utilizes a large amount of its fixed expenses while financial leverage is the use of fixed charges of resources together with shareholders' equity in the capital structure (Le-Kim, Duvernay and Le Thanh, 2021; Saleh *et al.*, 2021). Liquidity and leverage are linked because heavily leveraged companies use liquid assets as a safety measure to withstand market shocks and to pay down debt and the ensuing prospective fixed charges (Supriati, Ramaditya and Wardhana, 2019). Financial performance refers to how successfully a company uses its limited resources to produce assets that yield the highest incomes overall. It is argued that the maximization of a company's worth measured in its financial performance ought to be its primary goal (Prempeh, Sekyere and Addy, 2018; Supriati, Ramaditya and Wardhana, 2019). The decision about financial leverage and liquidity should be evaluated in light of how it will affect the firm's

value (Prempeh, Sekyere and Addy, 2018). As such, if a company's choice of capital structure can affect its value, it will want to have a capital structure that optimizes its market value. On the other hand, if its liquidity exerts effects on its performance, then, it out to maximize same to obtain higher profit (Prempeh, Sekyere and Addy, 2018; Supriati, Ramaditya and Wardhana, 2019).

1.2 Statement of the Problem

It is important that businesses must make financing decisions since the best balance of debt and equity affects both the firm's worth and the pricing of its stocks on the stock market (Prempeh, Sekyere and Addy, 2018). It is of the above that at the firm level various parties are engaged in decision-making when it comes to equity or debt funding. Theoretically, varied views exist on leveraging and liquidity usage and the policy mix to which it could yield favourable results for entities. For instance, according to the pecking order theory, large companies with high turnover must utilize their internal capital as far as their value partition is larger than their liabilities. This could help them to finance a sizable percentage of their planned initiatives (Li *et al.*, 2020). The trade-off theory, on the other hand, contends that companies with a variety of assets should support their operations with debt in order to avoid the problem of insolvency, which can have a significant impact on the day-to-day operations of the company (Li *et al.*, 2020). On the part of the right balance of equity and debt, Modigliani and Miller in their theory argued that there is “equity and debt proportion is worthless” in terms of firms performance (Supriati, Ramaditya and Wardhana, 2019).

Without a doubt, there are many studies on leveraging and liquidity in extant literature (example; Hongli *et al.*, 2019; Miroga & Shimenga, 2019; Prempeh *et al.*, 2018; Saleh *et al.*, 2021; Supriati *et al.*, 2019). Nonetheless, the conclusions drawn from these numerous

researches have remained unclear. Supriati et al., (2019) investigated the topic “examining the impact of leverage and liquidity on Corporate Performance (a case study on food and beverage companies in Indonesia)”. They concluded that liquidity and leveraging exerts significant positive influences on firm level profitability, however, the influence remains indirect when leveraging is considered. Similar conclusion was provided by the study conducted by Miroga and Shimenga, (2019) entitled “Influence Of financial leverage and liquidity on financial performance of manufacturing firms listed at the Nairobi Securities Exchange.” Different finding was arrived in the study conducted by Saleh et al., (2021) on the topic “the Impact of liquidity and leverage on profitability in Industrial Sector in Jordan”.

They concluded that liquidity’s negative impact on financial performances is not significant whereas leveraging exerts significant negative effect on performance.

Notwithstanding the above, several factors could be associated with the varied outcomes provided by extant literature on the concepts. For instance, Saleh et al., (2021) argued that situational and contingent factors lead to discrepancies and inconsistencies in the numerous studies that examined the connection between the various elements of financial structure and profitability of firms. Equally, the divergent outcomes from extant literature could occur as a result of several variables employed as proxies for the relevant measurements. For instance, several proxies exist in measuring liquidity including liquidity asset ratio (LAR), liquidity debt ratio (LDR), cash equivalent to debt ratio, among others. On the other hand, the various proxies for measuring leverage include; debt to asset ratio, debt to capital ratio, debt to equity ratio, asset to equity ratio, among others. On the aspect of firm performance, empirical literature provided varied proxies such as return on asset ratio (ROA), return on equity ratio (ROE), Return on sales ratio (ROS), among others. The above divergent findings necessitate new

studies to establish the exert nature of effects of leveraging and liquidity on financial performance of firms to aid policy recommendations.

Furthermore, though there exist some empirical studies on the two concepts worldwide, extant literature on the two concepts in Ghana is lacking. Several empirical studies in Ghana focused on only one of the variables and investigated its impact on financial performance. For instance, Zhongming et al., (2020) investigated the “effect of Credit Risk and Liquidity Risk on the Performance of Commercial Banks in Ghana.” They concluded that liquidity ratio, exerts positive effect on the dependent variable (financial performance). Equally, Li et al., (2020) investigated “liquidity and firms’ financial performance nexus: panel evidence from non-financial firms listed in the Ghana Stock Exchange”. They concluded that the performance of the companies as evaluated by Return on Equity is significantly impacted negatively by liquidity. However, when cash flow serves as a moderator, the influence was positive but insignificant.

In addition to the above, few studies exist on the two concepts simultaneously (leverage and liquidity) on firm performance in Ghana (example: Hongli et al., 2019; Prempeh et al., 2018). For instance, Prempeh et al., (2018) assessed the topic “a multivariate analysis of determinants of profitability: evidence from selected manufacturing companies listed in the Ghana Stock Exchange”. They concluded that whiles liquidity exerts positive and significant effect on profitability, leverage exerts significantly negative effect on firms profitability. Different finding was provided by Hongli et al., (2019) that assessed the topic “the effect of liquidity and financial leverage on firm performance: evidence from listed manufacturing firms in the Ghana Stock Exchange”. They concluded that both leverage and liquidity exerts positive effects on profitability of firms.

Based on the above identified gap this new study aimed at “examining the effects of leveraging and liquidity on financial performance of listed firms in the Ghana Stock Exchange”. In effect, the novelty of the study will be to examine the individual effects of the two concepts (liquidity and leverage) separately on financial performance of firms and equally examine their interactive effects on the dependent variable.

1.3 Objectives of the Study

1.3.1 Main Objective

The main aim of the study is to “assess the effect of leveraging and liquidity on financial performance of listed firms in the Ghana Stock Exchange”.

1.3.2 Specific Objective

1. To investigate the effects of leveraging on financial performance of listed firms in the Ghana Stock Exchange.
2. To examine the effects of liquidity on financial performance of listed firms in the Ghana Stock Exchange.
3. To analyse the interactive effect of leveraging and liquidity on financial performance of listed firms in the Ghana Stock Exchange.

1.4 Research Questions

The study’s research questions are as stated below:

1. What is the nature of effect of leveraging on financial performance of listed firms in the Ghana Stock Exchange?

2. What is the effect of liquidity on financial performance of listed firms in the Ghana Stock Exchange?
3. What is the nature of the interactive effect of leveraging and liquidity on financial performance of listed firms in the Ghana Stock Exchange?

1.5 Summary of Methodology

The research used the quantitative research design with focus on causal comparative research design since the study investigated the effects of leverage and liquidity on performance of firms in the presence of some control variables. The study is rooted in the positivist philosophy as it employed statistical measures to provide results while the study employed the quantitative research approach. The population of the study was all listed firms in the Ghana Stock Exchange till date. In effect, there are 42 listed equities in the GSE and hence, this was used as the accessible population of the study. The study however sampled data from 15 firms represent 35.7% of the entire population of interest. The study gathered yearly data for 5 years (thus 2018 to 2022) from the financial statements of the sampled firms. Results were presented descriptively as well as inferentially using fixed and random effect panel regression models. These models received empirical justification to be relevant in helping minimize omitted variable bias by adjusting for unobserved variables and are time invariant confounders relevant to estimate cause and effect between given variables (Kalantonis, Kallandranis and Sotiropoulos, 2021; Al-Ahdal *et al.*, 2022).

1.6 Significance of the Study

- Board of Directors and Managers of Listed Firms in the Ghana Stock Exchange:

The findings could provide solid empirical evidence on the extent to which leveraging and liquidity affects firm performance. Specifically, given the significance of an organization's

capital structure, the study findings will help managers of firms to know the exact policy mix relative to internal and external funds required for its operations. This could help in firms' initial phase of their financial decision-making procedure. The recommendation can help management of listed firms in the Ghana Stock Exchange to create the ideal capital structure strategy and put together a bundle of financial instruments that must be offered to investors.

By following this methodical procedure, management will be able to execute its funding decision in line with its long-term growth strategy and its long-term goals for the company's expansion.

On the issue of liquidity, the recommendations can thereby be depended on by stakeholders of listed firms in the Ghana Stock Exchange to improve their organizations' financial performance in the midst of current economic woes of the country. Specifically, the findings and recommendations can help enhance the liquidity position of listed firms to either focus on short-term or long term cash management or on their working capital management so as to obtain better policy mix for effective performance.

- Investors and shareholders

The study result is significant to investors and shareholders of the listed firms as it will provide overall assessment of the two variables on the average financial performance of all the firms in the Ghana Stock Exchange. This will help them have a clear average assessment of all listed firms regarding liquidity and their leveraging performance.

- Researchers

The study aimed to fill an identified research gap by providing a thorough assessment of liquidity and leveraging as well as their interactive effects on financial performance of firms. However, new researchers could capitalize on the methodological and geographical limitations

of the study to conduct new related studies. New researchers can also focus on the approaches used in the study to guide their new related studies.

○ Academia

Students studying Finance, Management, Business Administration and other related courses could use the study findings to be more abreast with practical relationship between liquidity, leveraging and financial performance of firms in Ghana. This will help them to satisfy their academic goals or curiosity.

1.7 Delimitations and Limitations of the Study

The study examined the effects of leveraging and liquidity on financial performance of firms in Ghana. There are numerous firms in Ghana spanning across several sectors, regions and sizes. The choice of firms for the study was limited to firms listed in the Ghana Stock Exchange. The choice was because data availability was the main drive for studies of this nature and as such this study was not an exception. This is because firms listed in the Ghana Stock Exchange are required to publish their annual financial statement. The choice for this study implies that results can only be limited to the firms listed in the Ghana Stock Exchange.

The study used secondary data where published annual financial statements of listed firms in the Ghana Stock Exchange were compiled for analysis. Also, empirical studies indicated that several proxies exist for measure the three main concepts of the study (leverage, liquidity and financial performance or profitability). However a crucial observation was that varied proxies used to measure the variable yielded varied and contrasting results. However, this current study cannot use all existing proxies and as such choice making was very crucial. It is of this that the study findings can only be interpreted with certainty with reference to the proxies used.

Empirical studies indicated that the choice of panel data for econometric analysis calls for several robustness checks. However, this recent study was limited to the use of classical linear regression for result presentation. However, classical linear regression analysis has several limitations which can affect the study result interpretation or usage for policy purposes.

1.8 Organization of the Study

There are five main chapters;

First chapter of the study provides preliminary introductions to the study. Specifically, the chapter laid the foundation for the entire study by delving into the background of the study as well as the theoretical and empirical research gap. The various specific objectives, and research questions were discussed in the chapter. Other important sections are the methodology summary, relevance or significance of the study and research limitation.

Chapter two provides review of definitions and concepts of leverage, liquidity and their measurements. Discussion was also done on the relationship existing between liquidity and leveraging as independent variables and financial performance as the dependent variables. The effect of firm size as a moderator was also discussed in the conceptual review. The

Chapter reviewed related theories such as the Trade-off theory (TOT), Pecking Order Theory (POT), Trade Credit Theory (TCT) and the Market Timing Theory (MTT). The study reviewed past related studies from Ghana as well as around the world published from 2018 to 2022. Conceptual framework was adopted and reframed to incorporate the various aspects of the study goals.

A research method was done in chapter three. The preliminary section was discussion on the framework adopted in data gathering and analysis (approach, design and philosophy). The

target population, study sample, the specific sampling approach adopted were discussed. The data gathering source, type of data, validity and reliability, the econometric methodologies used were discussed as well as how the various analytical tools were used for analysis.

The fourth chapter was the results presentation and discussions. The chapter provided all tabular results from the study findings. The presentation was done based on the study specific goals. Each result was discussed and analysed as well as contrasted to existing extant literature.

The last but not the least chapter, chapter five provided brief presentation of major and important findings. Overall conclusion of the chapter was also provided while the chapter ended with policy implementation recommendations and suggestions for future studies

CHAPTER TWO

LITERATURE REVIEW

2.0 Chapter Overview

Chapter two provides a review of definitions and concepts of leverage, liquidity and their measurements. Discussion was also done on the relationship existing between liquidity and leveraging as independent variables and financial performance as the dependent variables.

The effects of firm size as a moderator were also discussed in the conceptual review. The Chapter reviewed related theories such as the Trade-off theory (TOT), Pecking Order Theory (POT) and the Market Timing Theory (MTT). The study reviewed past related studies from Ghana as well as around the world published from 2018 to 2022. Conceptual framework was adopted and reframed to incorporate the various aspects of the study goals.

2.1 Conceptual Review:

This section reviewed definitions of the main concepts as well as various existing dimensions of measurement; thus definitions and measurements of leveraging, liquidity and financial performance of firms. Review was also done on the individual effects of leveraging and liquidity on financial performance of firms.

2.1.1 Liquidity

2.1.1.1 Definition and concept of Liquidity

The capacity of a business to fulfil its current liabilities is known as liquidity. This implies that the business will be able to pay off its debt, particularly debt that has matured, if it is required to fulfil its obligations (Miroga and Shimenga, 2019). A firm's claim to have excessive present resources could increase the likelihood that internal subsidies will result in a relationship between influence and liquidity. Liquidity is therefore defined by Li et al., (2020) as "organizing and monitoring available funds and current liabilities in a manner that removes the risk of failure to meet temporary commitments on the one hand and avoid indulging in excessive interest in these benefits on the other." Additionally, having enough liquidity impacts a firm's ability to manage its budget. A crisis may arise from a financial entity's failure to pay its financial obligations or liabilities. In order for a firm to be able to fulfil share and savings withdrawals, repayment of borrowed funds, and operational costs, proper liquidity management is crucial (Miroga and Shimenga, 2019).

Lack of a liquidity management strategy, noncompliance with the strategy, and poor cash flow management are all contributing factors to liquidity crisis (Zhongming et al., 2020). Illiquidity has negative effects on listed companies, such as their difficulty to pay for share and savings

withdrawals, payment of borrowed funds, running costs and subscriber withdrawals, and sporadic service supply (Miroga and Shimenga, 2019).

2.1.1.2 Measurements of Liquidity

The current ratio, which was first proposed in the early 20th century, is the first determined proportion for evaluating liquidity (Li *et al.*, 2020). The ability of current assets to pay down current liabilities is measured by the current ratio. Mathematically the ratio is determined by dividing current assets by current liabilities. Formerly, corporations used a current ratio of 2 as a standard to assure their liquidity, but subsequently, the ratio has tended to shrink due to management decisions to reduce current assets.

Another ratio used to measure liquidity is the quick ratio, commonly known as the acid-test ratio (Supriati, Ramaditya and Wardhana, 2019). It differs from the current ratio since it excludes inventory from current assets due to its lower liquidity when matched to many comparable current assets. The quick ratio includes only accounts receivable as well as deposits held at a financial institution, whereas the current ratio includes all current assets.

Another proxy used for measuring liquidity ratio is Loan to deposits ratio (LDR). Loan to deposits ratio (LDR) gauges a bank's capacity to meet its monetary commitments through deposits. It is determined by dividing the entire loan by the total deposits, and financial institutions having smaller loan to deposit ratios typically have more liquidity.

Lastly, cash equivalent ratio is equally used as a proxy for measuring liquidity. The effectiveness of institutions in employing readily liquid cash or other assets that may be quickly

convertible to cash to pay monetary commitments without having an impact on credit operational processes is measured by the cash and cash equivalent ratio. It is thought that financial institutions with larger cash and cash equivalent ratios are relatively liquid.

2.1.2 Leverage

2.1.2.1 Definition and Concept of Leverage in business

Leverage is a measure of how much debt a firm accrued and it is inextricably connected to the capital used in a firm (Danso *et al.*, 2021). It is of this that Kalantonis et al., (2021) defined the term leverage as “the ratio of the net rate of return on capitalization to the net returns on shareholders equity is known as leverage”. According to (Le-Kim, Duvernay and Le Thanh, 2021) “the use of an asset or finances for which the company pays a fixed cost or fixed return is known as leverage”. Employing fixed assets or money against which a company must pay fixed rate of interest requirement, regardless of the volume of operations or the volume of operating income, is known as leverage (Danso *et al.*, 2021). Fixed operating costs arise from the usage of fixed assets by a company (Danso *et al.*, 2021).

Similar to this, an enterprise incurs fixed financial costs whenever it utilizes sources of financing in its capital structure for which it must pay a fixed cost or fixed rates of interest (Danso *et al.*, 2021; Kalantonis, Kallandranis and Sotiropoulos, 2021).

Operating leverage describes how a company uses fixed operating expenses like asset insurance, property taxes, depreciation, repairs and maintenance in its day-to-day operations. However, it excludes interest on debt-financed capital (Danso *et al.*, 2021). The operating leverage increases with the ratio of fixed operational costs to variable costs, and reverse is also true (Danso *et al.*, 2021; Kalantonis, Kallandranis and Sotiropoulos, 2021). The earnings before

interest and taxes, or EBIT fluctuates with the amount of merchandise sold. Operating leverage is a metric used to assess how changes in volume sales affect EBIT levels. On the other hand, Financial leverage, refers to “a company's capacity to employ fixed financial costs to amplify the effects of changes in operating profits on the firm's earnings per share” (Danso *et al.*, 2021; Kalantonis, Kallandranis and Sotiropoulos, 2021).. To put it another way, financial leverage is the propensity for excess net income to deviate significantly from operational profit (Le-Kim, Duvernay and Le Thanh, 2021). When the rate of return on investment exceeds the cost of borrowing money, the rate of return on equity capital increases (Le-Kim, Duvernay and Le Thanh, 2021). The main goal of financial management is to maximize investor wealth as a result of every financial management strategy. Leverage may contribute to higher earnings per share as well as earning before tax (Supriati, Ramaditya and Wardhana, 2019; Saleh *et al.*, 2021).

2.1.2.2 Measurements of Firms Financial Leverage

The first measure of a firms' leverage capacity used in extant literature is its leverage capacity. The debt ratio (sometimes known as the "debt-to-asset ratio") of a business compares its total obligations to its total assets. A percentage is used to represent the ratio. It suggests whether or not the business can pay off all of its debts using its assets, or the number of assets it would have to sell (Kalantonis, Kallandranis and Sotiropoulos, 2021). It displays the total debt load for the business. Overall debt divided by overall assets yield the debt ratio.

Debt to Equity Ratio is also used as a proxy for financial leverage capacity of firms. A firm's overall debt to entire equity is compared to determine its debt-to-equity ratio, which shows what proportion of the firm's funding originates from shareholders and creditors. Larger debt

ratios suggest that borrowed funds are utilized more frequently than investor funding, which is provided by investors (Kalantonis, Kallandranis and Sotiropoulos, 2021; Le-Kim, Duvernay and Le Thanh, 2021). A firm's overall debt is divided by its overall equity to determine the debt-to-equity ratio.

Furthermore, some studies also used equity ratio as a proxy for firm leverage capacity (example; Prempeh et al., 2018). The equity ratio compares the firm's total equity to its total assets to determine the value of assets funded by shareholders' investments. It measures all the assets that will ultimately belong to the shareholders once all of the liabilities have been settled (Prempeh, Sekyere and Addy, 2018). The equity ratio also calculates the ownership position of shareholders in the firm or the proportion of a firm's assets been funded by them. A larger equity ratio is viewed favourably since it demonstrates that shareholders have faith in and are prepared to support the organization, as well as indicating that the corporation is more resilient and much less risky (Prempeh, Sekyere and Addy, 2018; Hongli, S.E. and Bakpa, 2019). A firm's overall equity divided by overall assets yields the equity ratio.

2.1.3 Financial Performance

2.1.3.1 Definition and concepts of financial performance of firms

The ability of a company to generate additional resources from ongoing operations during a defined period of time is referred to as financial performance (Kalantonis, Kallandranis and Sotiropoulos, 2021). It entails increasing shareholders' wealth and producing profits, which are both considered a corporation's top priorities. Accounting proportions are employed to calculate how much better off an investor has gotten over time using information from financial statements, the balance sheet, as well as stock market prices (Prempeh, Sekyere and Addy,

2018; Supriati, Ramaditya and Wardhana, 2019; Saleh *et al.*, 2021). The decisions businesses make regarding capital investments, capital investment decisions, capital structure, as well as sales growth each have significant impact on investors' income. Financial performance is a broad indicator of a company's comprehensive financial strength over a specific time period. This could equally be employed to compare identical businesses within the same industry or to aggregate sectors or industries (Danso *et al.*, 2021; Saleh *et al.*, 2021).

2.1.3.2 Measurements of Financial Performance

Numerous academics have employed a variety of indices to gauge the firms' financial performance. The Return on Investment (ROI), Return on Equity (ROE), Return on Assets (ROA) and Value Added ratios are only a handful of the metrics used by the organization to gauge its financial performance. These ratios assess if the shareholders' aspirations, which include boosting investors' income through corporate investment, are really being accomplished.

The first proxy used to measure financial performance of firms in extant literature is Return on Assets (ROA). Net income is divided by total assets to compute ROA, which indicates how effectively total assets are used to generate profit. A greater ROA shows that banks are more profitable (Supriati, Ramaditya and Wardhana, 2019; Saleh *et al.*, 2021).

Return on Equity (ROE) is also used as a proxy to measure financial performance of firms in extant literature (example: Le-Kim *et al.*, 2021; Li *et al.*, 2020; Saleh *et al.*, 2021). It is a proportion that is comparable to ROA for calculating financial performance of firms; unlike ROA, ROE gauges how well shareholder equity is used to generate profits, which is the signal

that concerns investors the most. Investors typically perceive institutions with higher ROE as successful and prospective (Li *et al.*, 2020; Le-Kim, Duvernay and Le Thanh, 2021; Saleh *et al.*, 2021).

Another proxy used in literature to measure financial performance of a firm is its Net Profit Margin (NPM) (Widyastuti, 2019). The effectiveness of converting income into profit is measured by NPM (Net Profit Margin), which reveals an institution's capacity for financial management. Higher NPM is considered as a positive indicator of institutions' strong capacity for financial management (Widyastuti, 2019).

Net interest margin (NIM): NIM, which quantifies the amount of net interest profits obtained from financial institution daily operations, is also another metric for gauging financial performance. This is computed by subtracting costs from interest revenue and dividing the result by the typical interest-bearing assets. Higher NIM indicates more profitable financial transactions or operations (Miroga and Shimenga, 2019).

2.1.4 Liquidity and Performance

Numerous studies have discussed the trade-off amongst profitability and liquidity in respect to one another (Supriati, Ramaditya and Wardhana, 2019; Zhongming *et al.*, 2020; Saleh *et al.*, 2021). It is argued that risk affects a financial instrument's yield; thus, the greater the risk it assumes, the greater the returns it could generate implying that risk and financial performance are positively correlated (Le-Kim, Duvernay and Le Thanh, 2021). While a company's liquidity has a negative impact on risk, effective liquidity management boosts the effectiveness of

investments as well as other operational processes which then lowers additional costs resulting from them (Hongli, S.E. and Bakpa, 2019).

Increased current resource levels held by a company might increase the likelihood of internal subsidies resulting in a relationship between leverage and liquidity (Miroga and Shimenga, 2019). Accordingly, maintaining liquidity involves managing current assets and liabilities in a way that eliminates the risk of being unable to satisfy short-term obligations on the one hand, and keeps a reasonable buffer from an excessive interest in these benefits on the other (Miroga and Shimenga, 2019). Furthermore, a firm's financial soundness is impacted by sufficient liquidity. The majority of the metrics used for analysing liquidity, such as liquidity ratios and the currency turnover pattern, are derived from the working capital components, therefore liquidity is typically evaluated from the perspective of working capital management (Prempeh, Sekyere and Addy, 2018; Zhongming *et al.*, 2020).

Accounting norms and liquidity could have an impact on emerging economies investors' decisions to diversify their portfolios internationally. This indicates that there is a deferential forecast for each volatility element on liquidity. These facts have a direct relationship to the concept of liquidity, that highlights the vulnerabilities market participants must take into account when assessing liquidity (Miroga and Shimenga, 2019; Zhongming *et al.*, 2020).

In a related study, Li *et al.*, (2020) investigated the topic “liquidity and firms’ financial performance nexus: panel evidence from non-financial firms listed in the Ghana Stock Exchange”. The performance of the companies as evaluated by Return on Equity is significantly impacted negatively by liquidity, however, when Cash flow serves as a moderator, the influence was positive but insignificant.

2.1.5 Leveraging and Financial Performance

Financial leverage is one of the effective methods for an institution to achieve its targets because it demonstrates the need for financing to buy new assets, enhance the productivity, or carry out operational processes (Le-Kim, Duvernay and Le Thanh, 2021). It is of this that Saleh et al., (2021) argued that an organization can use financial leverage not only accomplish its objectives but also to increase investor value. Leverage can quickly determine a firm's financial situation or the level of leverage used by using financial leverage measures like the debts to equity ratio and the debts to total assets ratio. In order to enhance output, acquire a new asset, boost shareholder value, financial leverage is crucial for every organization (Kalantonis, Kallandranis and Sotiropoulos, 2021).

According to trade-off theory, corporations decide on the ideal capital structure to counterbalance the tax benefits of debt financing, also known as tax shields (Le-Kim, Duvernay and Le Thanh, 2021). The level of company profitability has the biggest impact on these tax shelters because profitable companies are less likely to go bankrupt and can benefit from debt tax shields (Danso *et al.*, 2021; Kalantonis, Kallandranis and Sotiropoulos, 2021; Le-Kim, Duvernay and Le Thanh, 2021). That last results in the prediction indicates the likelihood of profitability and debt to be correlated positively. The pecking order notion is in conflict with this.

Generally speaking, pecking order hypothesis stated why successful businesses have lesser leverage ratios (Kalantonis, Kallandranis and Sotiropoulos, 2021; Al-Ahdal *et al.*, 2022). Thus, theory suggests that a company that uses its retained earnings much and relies less on outside

finance is likelihood to be more prosperous it is. This practically means that businesses with profitability issues will be more likely to borrow money and be prepared to use outside funding in their operations (Danso *et al.*, 2021; Kalantonis, Kallandranis and Sotiropoulos, 2021). It follows that profitability and debt are likely to have a negative relationship.

In a related study, Le-Kim *et al.*, (2021) researched the topic “determinants of financial performance of listed firms manufacturing food products in Vietnam: regression analysis and Blinder–Oaxaca decomposition analysis.” From 2014 to 2019, the authors investigated 30 publicly traded food processing businesses in Vietnam. Regression analysis and BlinderOaxaca decomposition analysis were both used in the study. Empirical study findings concluded that leverage has a hugely detrimental effect on return on sale which is significant.

2.2 Theoretical Review

The chapter provided a review related theories such as the Trade-off theory (TOT), Pecking Order Theory (POT), Trade Credit Theory (TCT) and the Market Timing Theory (MTT).

2.2.1 Pecking Order Theory

This theory was based on a study conducted by Myers and Majluf in 1984. The theory argued that companies have the option to select a portfolio that increases investor inflow (Danso *et al.*, 2021). The hypothesis advises businesses to use retained income as held revenue and to remain first when funding their operations. According to this theory, businesses should start by using the least expensive type of financing to fund their activities (Danso *et al.*, 2021). Due to the informational imbalance between the company and outside parties, firms typically follow a pecking order of funding sources and prioritize internal funding sources first (Kalantonis, Kallandranis and Sotiropoulos, 2021; Al-Ahdal *et al.*, 2022).

Additionally, the theory shows that large companies are more likely to seek outside funding due to how easy it is to do so (Danso *et al.*, 2021). According to the notion, each company has a distinct way for financing its projects, and that demand for it is rapidly declining. The company may contemplate borrowing from outside sources if internal resources are ineffective for meeting some business decisions (Danso *et al.*, 2021; Kalantonis, Kallandranis and Sotiropoulos, 2021). Financial decision-making is impacted by excessive external borrowing. Utilizing external finance sources is a symptom that a company is not successful, that could lead to a decline in stock values (Kalantonis, Kallandranis and Sotiropoulos, 2021). Firms prefer debt to equity whenever external finance sources are required since debt has reduced information costs. The notion that managers believe company equities are expensive is signalled by the issuance of new stock rather than the purchase of new debt (Kalantonis, Kallandranis and Sotiropoulos, 2021). Management frequently issues shares, regardless of how reasonably or excessively priced the market is. Therefore, outside investors can view the release of a stock issue as a caution that the stock price is currently declining (Danso *et al.*, 2021).

The request proceeds by leveraging retained revenue before embarking on obligations or a value-based financing plan. As a result, inside financing is the safest way of financing because it generates no interest and doesn't affect the values of traditional offers (Danso *et al.*, 2021). The key justification for a company using obligation financing is when the benefits outweigh the costs. The utilization of external finance sources is evidence that a company is underperforming, which lowers stock costs (Danso *et al.*, 2021; Kalantonis, Kallandranis and Sotiropoulos, 2021). When external finance sources are required, businesses choose commitments to value based on lower data costs associated with the obligation. This model is

applicable to this research as listed corporations function in a Pecking order financial environment.

2.2.2 Trade off Theory

The trade-off theory is attributed to Kraus and Litzenberger in 1973. The theory hypothesizes that in order to avoid the problem of lack of liquidity, that may have a significant impact on the day-to-day operations of the company, enterprises with various advantages should support their activities with obligations (Miroga and Shimenga, 2019). It also shows that the company must conduct a funds-saving advantage analysis prior to financing projects using debt (AlAhdal *et al.*, 2022). Obligations are associated with high rates that can hinder the business's ability to operate as well as the effects they have on the business when they are not paid back on time. Before choosing to use obligation financing, every single one of these factors needs to be taken into account.

The phrase "trade-off" comes from the open-ended cost decision that has to be taken when weighing financing using obligations, that has great variety of negative effects on the company, against their benefits, which include how easily they are typically obtained (Miroga and Shimenga, 2019). The theory calls for the costs that the company must take into account before fulfilling its obligation (Kalantonis, Kallandranis and Sotiropoulos, 2021).

This concept describes why a business will prioritize trade-offs when deciding how much debt and equity to utilize for financing (Kalantonis, Kallandranis and Sotiropoulos, 2021). By finding a balance between tax benefits and the financial burden of debt, an ideal stock to debt capital structure could be attained (Al-Ahdal *et al.*, 2022). This idea applies to the study because

listed firms which meticulously choose the debt and equity proportions they utilize for financing were a little more likely to achieve larger profits than those that were less diligent (Al-Ahdal *et al.*, 2022). Higher debt burdened businesses suffered severe disadvantages. It is said that most businesses work to reach the ideal equity-to-debt capital structure ratio since doing so produces tax advantages (Danso *et al.*, 2021). Al-Ahdal *et al.*, (2022) supports the idea that management must place a priority on a suitable liquidity level to counterbalance the advantages and disadvantages of keeping cash. Due to the tax disadvantage and liquidity premium, these liquid assets have a low yield, which is the cost of cash reserves.

The argument of the theory is that while an organization's liquidity has a negative impact on risk, effective liquidity management improves the effectiveness of investments as well as other operational processes, lessens extra costs brought on by a deficit in liquidity, as well as decrease both the direct threat of liquidity or risk of default (Danso *et al.*, 2021; Kalantonis, Kallandranis and Sotiropoulos, 2021; Al-Ahdal *et al.*, 2022). The ideas of liquidity and profitability can be linked by relating it to how risk affects financial performance of firms and how risk and liquidity are related (Kalantonis, Kallandranis and Sotiropoulos, 2021). The theory relates to the study as it argues for trade-off between liquidity and performance with the former related to leveraging.

2.2.3 The Market Timing Theory

The market timing theory (hereafter MTT), essentially contends that market timing has a long-lasting and considerable impact on a firm's capital structure, is one theoretical objection to the pecking order hypothesis (Mabrouk and Boubaker, 2020). A company's capital structure is the culmination of all of its earlier efforts to time the financial markets through issuance,

repurchase, or redemption of securities. The MTT does not rely on the premise of a quasi-economic efficiency, but the pecking order theory does. MTT was created as a result of how frequently a firm's financial conditions fluctuate and how market imperfections can have a significant impact on corporate financing (Mabrouk and Boubaker, 2020).

According to the market timing hypothesis, the choice to issue equity is contingent upon market performance (Kalantonis, Kallandranis and Sotiropoulos, 2021). Thus, it implies that directors will be hesitant to issue shares if they believe it is cheap in the market. Investors therefore believe that equity difficulties only arise in situations where the equity is either appropriately priced or overvalued (Mabrouk and Boubaker, 2020). In conclusion, the MTT contends that, in contrast to the pecking order theory, the funding hierarchy is flexible since adverse selection and information asymmetry are subject to alter over time (Mabrouk and Boubaker, 2020; Al-Ahdal *et al.*, 2022). This indicates that the MTT does not set a target amount of leverage instead recognizing that a company's capital structure is flexible and dependent on a variety of variables.

2.3 Empirical Review

The study reviewed past related studies from Ghana as well as around the world published from 2018 to 2022.

A related study was conducted by Supriati et al., (2019) entitled “examining the impact of leverage and liquidity on corporate performance (a case study on food and beverage companies in Indonesia)”. The quantitative approach was employed to achieve the goals, and data were gathered using financial statement data from the Indonesia Stock Exchange.

Information from financial report data between 2012 and 2016 was used to analyse a total of 11 companies. Version 22.0 of the statistical program for social science was used to examine the data. The results of regression analysis and path analysis showed that there is a significant relationship between liquidity and profitability. Additional results demonstrate that profitability has the greatest impact on financial performance. Furthermore, a different finding demonstrated that indirectly leveraging or capital structure exert a significant influence on firm level profitability.

Miroga & Shimenga, (2019) also conducted on the “influence of financial leverage and liquidity on financial performance of manufacturing firms listed at the Nairobi Securities Exchange.” The study used a descriptive research design and included 10 businesses in its sample. The 95 respondents were chosen at random using the census approach for the study. Structured questionnaires were employed in the study to gather primary data, and both content validity and Cronbach's alpha were used to determine the reliability and validity of the research instruments. SPSS version 24 was used to analyse the data. Inferential statistics used were linear association as well as both linear and multiple regressions. The results of the study showed that leverage and liquidity were the two major predictors that had the greatest impact on the profitability of the firms. The research found that liquidity is a considerable determinant of financial performance in manufacturing firms, so those firms having efficient management of their cash flow could indeed had substantial gains in their financial performance. Equally, enhanced leveraging strategies of firms could transcend to their profitability.

Saleh et al., (2021) assessed the topic “the impact of liquidity and leverage on profitability in industrial sector in Jordan”. A descriptive research design was adopted in the research. Secondary data spanning six years was used (2013-2018). Purposive sampling was utilized in the sampling process to get a selection of 14 businesses. Panel data regression was employed in the data analysis for this investigation. Following the collection of the data, the linearity, heteroscedasticity, multicollinearity, autocorrelation tests, Hausman test and Chow's test of classical assumption test were used. The report reveals that financial performance of firms is not significantly negatively impacted by liquidity whereas leverage significantly negatively impacts profitability.

Some related studies were also conducted in Ghana. For instance, Prempeh et al., (2018) assessed the topic “a multivariate analysis of determinants of profitability: evidence from selected manufacturing companies listed in the Ghana Stock Exchange”. The information was gathered from 5 manufacturing companies which covered the years 2005 to 2015. The Multivariate Regression Analysis Technique was used in the study. The dependent variable was Return on Assets, a metric of profitability, while the predictor factors included leverage, business size, liquidity, tangibility, inflation, GDP as well as interest rate. The results indicated that business size and liquidity have statistically substantial positive relationships with profitability. Leverage however exerts significant and negative relationships effects on financial performance of firms.

Zhongming et al., (2020) also assessed the topic “effect of credit risk and liquidity risk on the performance of Commercial Banks in Ghana.” The research examined 14 years' worth of annual and financial reports from Ghana's recognized commercial banks. The OLS regression was used to test the hypotheses that were developed for the study. Control variables aid in assessing the study's robustness and providing a clearer explanation of its goals. The findings

indicated that non-performing loans and performance had an inverse relationship. Similar to this, the ROA of Ghanaian banks was negatively impacted by the credit ratio and loan to deposit ratio. Liquidity ratio, on the other hand, showed to be positively correlated with the explanatory variables.

The review shows that contrasting findings exist on the effects of leveraging and liquidity on financial performance of firms. This necessitated this new study.



Table 2.1 Summary of Empirical review of key papers

Arthur(s) and year of publication	Country	Key Variables	Methodology	Key Findings
Prempeh et al., (2018)	Ghana	Leverage, Liquidity and Profitability	Quantitative Research Design	1.Liquidity exerts positive effects on financial performance of firms 2. Leverage negatively impacts on financial performance of firms
Supriati et al., (2019)	Indonesia	Leverage, Liquidity and Financial Performance	Quantitative Research Design	1.Liquidity exerts positive effects on financial performance of firms 2. Indirect leveraging positively impacts on financial performance of firms
Miroga & Shimenga, (2019)	Nairobi-Kenya	Leverage, Liquidity and Financial Performance	Descriptive Research Design	1.Liquidity exerts positive effects on financial performance of firms 2. Leverage negatively impacts on financial performance of firms
Zhongming et al., (2020)	Ghana	Liquidity and Financial Performance	Quantitative Research Design	1.Liquidity exerts significantly positive effects on financial performance of firms
Saleh et al., (2021)	Jordan	Leverage, Liquidity and Profitability	Descriptive Research Design	1.Liquidity exerts positive but insignificant effects on financial performance of firms 2. Leverage negatively (and significantly) impacts on financial performance of firms

Source: Researcher (2022)

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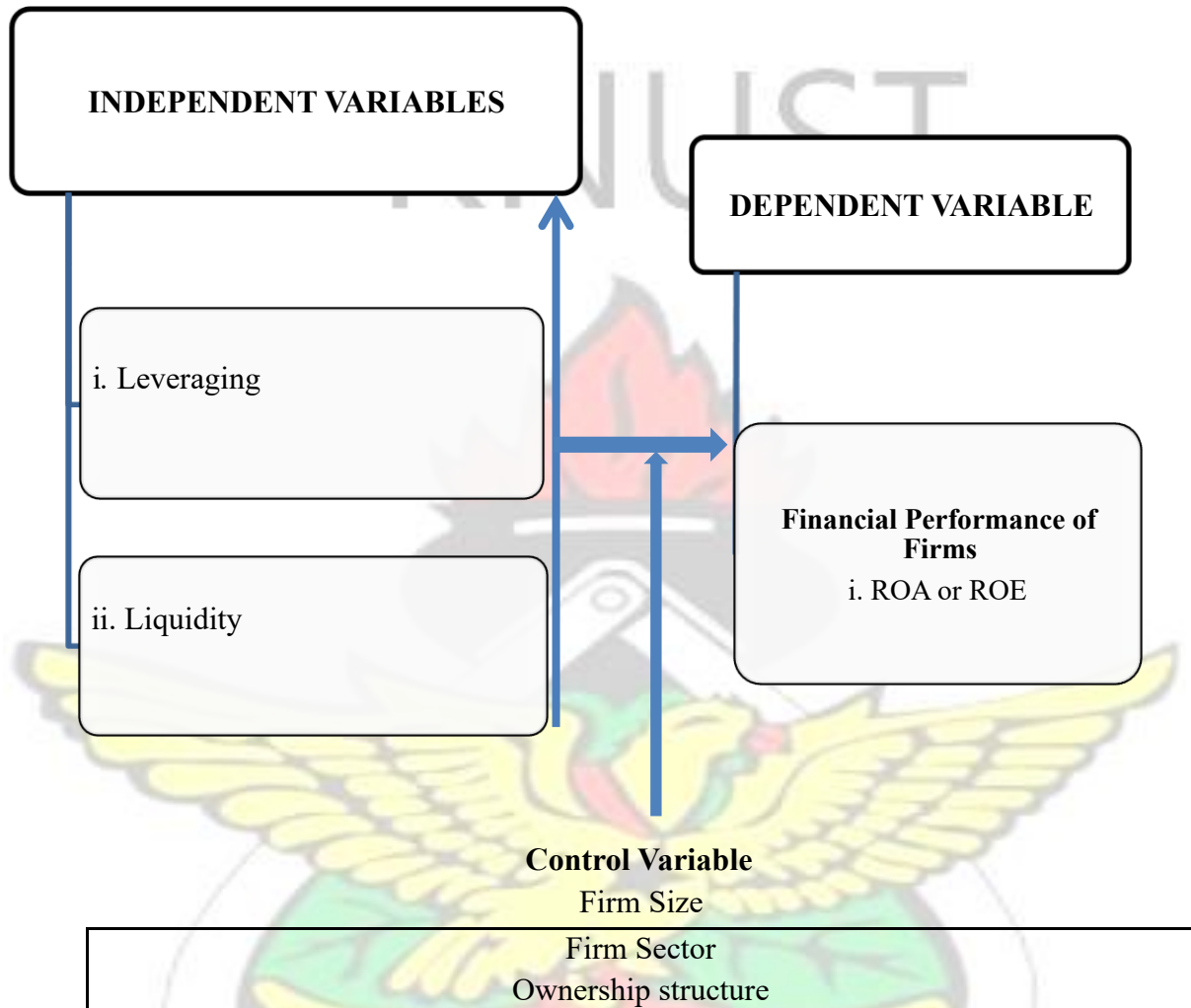
29



2.4 Conceptual Framework

The framework for the study is as shown below:

Figure 2.1 Conceptual Framework



Source: Adopted from the works of Miroga & Shimenga, (2019) and reframed to include control variable.

The framework as indicated shows leverage and liquidity as the exposure variables or explanatory variables for the study. It shows financial performance of firms as the outcome variable or explained variable. The framework shows that leveraging and liquidity exert some level of effect on financial performance of firms. The framework indicates that the control

variables such as firm size, firm sector and ownership structure can exert some level of regulatory role on the process.

2.7 Conclusion of Literature Review

Varied definitions and measurements of the concepts (leverage, financial performance and liquidity) were provided at the preliminary section of the literature. The linkage between the two independent variables (liquidity and leverage) on financial performance was discussed in detailed. Trade-off theory (TOT), Pecking Order Theory (POT), Trade Credit Theory (TCT) and the Market Timing Theory (MTT) were reviewed. Empirically related studies from key papers were discussed and research gap indicated. The chapter provided diagram to link the dependent and the independent variables of the study.



CHAPTER THREE

RESEARCH METHODOLOGY

3.0 Chapter Overview

The chapter discusses the research method. The preliminary section was discussion on the framework adopted in data gathering and analysis (approach, design and philosophy). The target population, study sample, the specific sampling approach adopted were discussed. The data gathering source, type of data, the econometric methodologies used were discussed as well as how the various analytical tools were used for analysis.

3.1 Research Philosophy, Research Approach and Research Design

3.1.1 Research Philosophy

The study is engrained in the positivist philosophy. Foundationalism and empiricism gave rise to positivism, which stressed objectivity and the testing of hypotheses. Positivism is a subset or development of empiricism, and it is commonly linked with inquiries to ascertain whether they are important enough to warrant quantitative examination (Ryan, 2018). On a metaphysical level, positivists contend that there are verifiable truths, coherence in reality of course that may be discovered by experiment, and justification for quantitative determination. The inductivism, phenomenism, deductionism, and objectivism are the main characteristics of positivism (Kenaphoom, 2021). Phenomenism argues that offers that only information that has been scientifically demonstrated is actual knowledge, whereas theoretical deductivism of positivism offers hypotheses that can be tested for established "rules" (Kenaphoom, 2021). The positivist claimed that scientific knowledge is objective, implying that the results must be free of all values. In contrast, positivist inductivism contends that knowledge is gained through the use of the aggregation of evidence that constitute the basis for laws (Kenaphoom, 2021).

The study is grounded on positivism because it uses quantitative methods to produce findings. Specifically, the data for the study remains a numerical dataset and equally analytical technique

used is statistical in nature and hence, the above qualifies the study to be grounded in positivist philosophy.

3.1.2 Research Approach:

The study employed the quantitative research approach. The quantitative research approach is a type of research approach that places a strong emphasis on quantifying data collection and processing (Tabash *et al.*, 2022). It is based on a deductive method that emphasizes the validation of theory and is influenced by positivist and empiricist ideologies. The construction and the application of mathematical ideas, frameworks, and assumptions relating to phenomena is the goal of quantitative approach (Leavy, 2019). The measurement procedure is essential to quantitative research since it establishes the link between empirical observation and the mathematical representation of quantitative associations. Any data that is expressed numerically is considered quantitative data and as such warrant the use of statistics for its analysis. In summary, quantitative research approach is a type of research that exemplifies the following characteristics; measurability of variables and producing of predictive results or outcome (Leavy, 2019).

The quantitative research approach was used in the study because the study makes use of numerical systems to evaluate the variables, analytical algorithms to analyse the measurements, and reporting the linear association and relationship between the variables using econometric models such as regression. This quantitative data is being collected with the intention of better understanding, describing, and forecasting the study phenomenon, notably through the creation of models (econometric models).

3.1.3 Research Design

The study used the quantitative research design with focus on causal comparative research design. This design is also known as the Ex post facto design. It is a form of quantitative research design that tries to identify cause-and-effect between variables without directly manipulating independent variables (Osuagwu, 2020). Based on certain naturally occurring differences, it entails comparing existing groupings or circumstances. It is argued that in a causal-comparative research design, the researcher selects groups or situations that differ in terms of the independent variable(s) of interest and analyses the effects of those variations on the dependent variable(s) (Osuagwu, 2020). By examining how changes in the independent variable(s) are connected with changes in the dependent variable(s) while controlling for other pertinent factors, the design enables the exploration of any potential causal relationship between variables (Osuagwu, 2020).

Empirical studies provided some strong arguments in support of causal-comparative design in research. For instance, it is argued that the design is helpful for developing hypotheses or doing exploratory research (Osuagwu, 2020). It can equally reveal trends, connections, or patterns between different variables, leading to the creation of ideas or hypotheses that can then be put to the test through other research methods (Osuagwu, 2020). Additionally, it is asserted that the design enables the management of any confounding variables. The internal validity of the study can be improved by including control variables that are known or believed to have an impact on the connection between the independent and dependent variables (Osuagwu, 2020).

The study employed the causal-comparative research design, a form of quantitative research design since it aimed to “assess the effect of leveraging and liquidity on financial performance of listed firms in the Ghana Stock Exchange, in the presence of some control variables”.

Specifically, the choice of types of design for the study was necessitated by the specific goals of the study. This design was used because, groups of businesses with various degrees of leverage and liquidity were contrasted and their distinct firm performance metrics. The design assisted in separating the impacts of leverage and liquidity on company performance by controlling for other variables that may have an impact on performance, such as firm size, industry, ownership structure

3.2 Population of the Study

The population in research encapsulates the entire set of components from which a researcher collects data for a study. It could be a grouping of people, an accumulation of things, or any other topic of interest to the researcher (Naszariah, Naseri and Rahmiati, 2022). It is what makes up a study's dataset. Population, in general, refers to the total number of people residing in a location at any particular time (Adam, 2020). The population of the study is all listed firms in the Ghana Stock Exchange till date. The Ghana Stock Exchange was established in 1971 by legislative provision but its implementation was done in 1989. By going public and listing in the Ghana Stock Exchange, a firm can acquire needed funds. To be listed in the Ghana Stock Exchange “a company must first be registered as a public company limited by shares under the Companies Act, 1963 (Act 179)”. Additionally, it must permit public invitations to purchase any of its stock without placing any constraints on the quantity of stock holders.

In all, there are 42 listed equities in the GSE and hence this was used as the population of the study.

3.3 Sample Size and Sampling Technique

3.3.1 Sample Size

The study used data availability from the GSE on the firms for data sample size selection. As such, only companies listed in the GSE that were in existence from since 2021 were considered for the study. Equally, a major consideration for selection was availability of published annual statement for the stated years. The study sampled data from 15 firms representing 35.7% of the total targeted population (thus 42 firms). The study gathered yearly data for 5 years (thus from 2018 to d 2022) on the 15 sampled firms.

3.3.2 Sampling Technique

The study made use of purposive sampling. Purposive sampling, often referred to as selective or perceptive sampling, is a sort of non-probability randomisation in which researchers choose elements from a vast population depending on characteristics of the population connected to the study's objective (Tabash *et al.*, 2022). According to the argument, all a researcher needs to do to create the sample is to filter out participants who might not fit a particular characteristic (Naszariah, Naseri and Rahmiati, 2022). Merits of the purposive sampling ranges from its inexpensiveness to helping researchers produce useful study results by maximizing the usage of a small population of interest (Naszariah, Naseri and Rahmiati, 2022). Also, it is stated that it helps to gather data for a more precise study by focusing on certain demographics. As such, it helps researchers to collect precise data for their specific research (Tabash *et al.*, 2022). The technique also minimizes the margin of error in a data analysis because the data sets closely match the context of the investigation (Tabash *et al.*, 2022).

The study sampled listed firms in the Ghana Stock Exchange with published annual data for 5 years span (from 2018 to 2022). The availability of data from the Ghana Stock Exchange on

the major variables of the study from the listed companies was a major criterion for selection of a company. In all, 15 firms were sampled for the study.

3.4 Variables, Type of Data and Source of data

3.4.1 Variables

3.4.1.1 Dependent variable:

Financial performance of firms was measured using returns on asset (ROA) and returns on equity (ROE).

- Return on Assets (ROA): Net income is divided by total assets to compute ROA, which indicates how effectively total assets are used to generate profit. A greater ROA shows that banks are more profitable (Supriati, Ramaditya and Wardhana, 2019; Saleh *et al.*, 2021). Its calculation is as shown below:

$$\text{Return on Assets (ROA)} = \frac{\text{Net Income}}{\text{Total Assets}}$$

- Return on Equity (ROE): It is a proportion that is comparable to ROA for calculating financial performance of firms; unlike ROA, ROE gauges how well shareholder equity is used to generate profits, which is the signal that concerns investors the most. Investors typically perceive institutions with higher ROE as successful and prospective (Li *et al.*, 2020; Le-Kim, Duvernay and Le Thanh, 2021; Saleh *et al.*, 2021). Its calculation is as shown below:

$$\text{Return on Equity (ROE)} = \frac{\text{Net Income}}{\text{Shareholders Equity}}$$

3.4.1.2 Independent Variables:

Leveraging will be measured using DAR (debt to asset ratio) and DER (Debt equity ratio) whiles using Liquidity will be measured CAR (current asset-current liabilities ratio) sourced from GSE, financial statements of listed firms.

Leveraging

- Debt to Asset Ratio: The debt ratio (sometimes known as the "debt-to-asset ratio") of a business compares its total obligations to its total assets. It can be represented as:

$$\text{Debt to Asset Ratio} = \frac{\text{Total Debt}}{\text{Total Assets}}$$

- Debt to Equity Ratio: A firm's overall debt is divided by its overall equity to determine the debt-to-equity ratio and it can be represented as:

$$\text{Debt to Equity Ratio} = \frac{\text{Total Debt}}{\text{Overall Equity}}$$

Liquidity

- Current Ratio (CR): Mathematically the ratio is determined by dividing current assets by current liabilities.

$$\text{Current Ratio (CR)} = \frac{\text{Current Assets}}{\text{Current Liabilities}}$$

3.4.1.3 Control Variables:

- **Firm Size:** The first control variable used is firm Size. Firm Size was used based on empirical justification for its use in recent related papers (Banafa, 2016; Hongli, S.E. and Bakpa, 2019; Akram *et al.*, 2021; Al-Ahdal *et al.*, 2022). It was measured using the firm's total asset. This method was justified in empirical studies such as Akram *et al.*, (2021).

- **Firm Sector:** Firm sector was also used as a control variable with empirical validation from studies such as Sudiyatno & Suwarti, (2022). In the study, firms were categorized into two groups (banking and non-banking sector).
- **Ownership Structure of Firm:** Ownership structure of firms was also used as a control variable. It was used in similar related studies such as (Akram *et al.*, 2021); Kajola *et al.*, (2019). In the study, firms used were categorized into two groups; public (state owned) or privately owned.

3.4.2 Type and Source of Data

Secondary data type was employed in the study. Secondary data is information obtained by a party different from the original source, such as a person, organization, or government (Ansari *et al.*, 2022). Utilizing current data provided by governmental organizations, healthcare facilities, and other sources are additional sources which can be retrieved from numerous distinct data files. Secondary data can be gathered quickly and effortlessly. Examples of sources include official documents, the internet, publications in scientific journals, and internal documents. A major advantage of this type of data is that it is economical. Due to the fact that the data had already been acquired, the investigator could move forward with the investigation without having to commit any additional resources on data gathering. Even while secondary data gathering may need to be purchased, the expenses is usually lower than what it would cost to capture an identical primary dataset. Additionally, there is a considerable time savings in using secondary data (Supriati, Ramaditya and Wardhana, 2019).

Data on firm Financial performance of firms, Leveraging and Liquidity the main secondary data used for the study. The data were quantitative implying numerical values on the main variables of the study were sourced from GSE, financial statements of listed firms.

3.5 Econometric Models

The study used the Random and fixed effect regression models. The choice of these models is due to empirical justification for its use in related empirical studies reviewed (Kalantonis, Kallandranis and Sotiropoulos, 2021; Al-Ahdal *et al.*, 2022). Random effect model indicate the unseen heterogeneity or variations among units that are thought to be distributed randomly (Al-Ahdal *et al.*, 2022). They are used when the population of units as a whole rather than a single unit is the main focus random effects are often employed and as such are considered as random variables. The goal of random effects models is to determine the variance of the distribution from which the differences between units are derived (Kalantonis, Kallandranis and Sotiropoulos, 2021; Al-Ahdal *et al.*, 2022).

On the other hand, the systematic distinctions between distinct units or entities in a dataset are captured using fixed effects. These entities might be people, businesses, nations, or any other type of entity for whom data is gathered. It is believed that fixed effects remain constant and unchangeable for all observations within a unit (Kalantonis, Kallandranis and Sotiropoulos, 2021; Al-Ahdal *et al.*, 2022). A statistical model's fixed effects are intended to account for unobserved heterogeneity or variations among the units. In essence, fixed effects maintain the fixed features constant while comparing the within-unit variance (Kalantonis, Kallandranis and Sotiropoulos, 2021; Al-Ahdal *et al.*, 2022).

The two were used in the study and their results were compared to allow for thorough analysis and policy suggestions.

The study tested the following regression models:

- Using Returns on Assets (proxy for firm level performance) as the Dependent Variable

$$ROA_{it} = \alpha_{it} + \beta_1 DAR_{it} + \beta_2 DER_{it} + \beta_3 F_Size_{it} + \beta_4 F_Sector_{it} + \beta_5 F_Own_{it} + \varepsilon_{it} \dots \text{equation 1}$$

$$ROA_{it} = \alpha_{it} + \beta_1 CAR_{it} + \beta_2 F_Size_{it} + \beta_3 F_Sector_{it} + \beta_4 F_Own_{it} + \varepsilon_{it} \dots \text{equation 2}$$

$$ROA_{it} = \alpha_{it} + \beta_1 DAR_{it} * CAR_{it} + \beta_2 DER_{it} * CAR_{it} + \beta_3 F_Size_{it} + \beta_4 F_Sector_{it} + \beta_5 F_Own_{it} + \varepsilon_{it} \dots \text{equation 3}$$

where equation 1 measures leverage effect on financial performance, equation 2 measures liquidity effect on financial performance and equation 3 measures the simultaneous effect of both leverage and liquidity on performance. In each, case, three control variables were used: firm size, sector and ownership structure.

- Using Returns on Equity (proxy for firm level performance) as the Dependent Variable

$$ROE_{it} = \alpha_{it} + \beta_1 DAR_{it} + \beta_2 DER_{it} + \beta_3 F_Size_{it} + \beta_4 F_Sector_{it} + \beta_5 F_Own_{it} + \varepsilon_{it} \dots \text{equation 4}$$

$$ROE_{it} = \alpha_{it} + \beta_1 CAR_{it} + \beta_2 F_Size_{it} + \beta_3 F_Sector_{it} + \beta_4 F_Own_{it} + \varepsilon_{it} \dots \text{equation 5}$$

$$ROE_{it} = \alpha_{it} + \beta_1 DAR_{it} * CAR_{it} + \beta_2 DER_{it} * CAR_{it} + \beta_3 F_Size_{it} + \beta_4 F_Sector_{it} + \beta_5 F_Own_{it} + \varepsilon_{it} \dots \text{equation 6}$$

where equation 4 measures leverage effect on financial performance, equation 5 equation measures liquidity effect on financial performance and equation 6 measures the simultaneous effect of both leverage and liquidity on performance. In each, case, three control variables were used: firm size, sector and ownership structure.

3.6 Data analysis plan

3.6.1 Data Computation

Stata version 14 was used for data computation. Data gathered from the published yearly financial statements of the sampled listed firms in the Ghana Stock Exchange were computerized into Stata software. The software was then commanded for results.

3.6.2 Descriptive Analysis

Descriptive statistical results on the mean and standard deviations of the variables used in the study were presented as the preliminary analysis. This encompasses result on the mean Return on equity, Return on Assets, Debt-equity ratio, Debt Asset ratio, current asset-current liabilities ratio and firm size were presented and discussed.

Regression Analysis (Results based on the research objectives)

Objectives 1: To investigate the effects of leveraging on financial performance of listed firms in the Ghana Stock Exchange.

Fixed and Random effect regression results were presented on the two variables to measures the effects of leveraging on financial performance of listed firms in the Ghana Stock Exchange. The coefficients of the various independent variables (debt-assets ratio and debtequity ratio) were explained taking into consideration their level of significant and sign definiteness. Results that conform to the three conventional significant levels (1%, 5% and 10%) were interpreted as having exert some level of effect on the dependent variable.

Objective 2: To examine the effects of liquidity on financial performance of listed firms in the Ghana Stock Exchange.

Fixed and Random effect regression results were presented to measure the effects of liquidity on financial performance of listed firms in the Ghana Stock Exchange. The coefficients of the various independent variables (including current asset-current liabilities ratio) were explained taking into consideration their level of significant and sign definiteness. Results that conform to the three conventional significant levels (1%, 5% and 10%) were interpreted as having exert some level of effect on the dependent variable.

Objective 3: To analyse the interactive effect of leveraging and liquidity on financial performance of listed firms in the Ghana Stock Exchange.

The variables used to measure leveraging and liquidity were interacted to form a unit variable and was used in the regression as independent variable to measure their interactive effect on the dependent variable. Fixed and Random effect regression results was then presented and discussed. The coefficients of the independent variables (including the interactive terms) were explained taking into consideration their level of significant and sign definiteness. Results that conform to the three conventional significant levels (1%, 5% and 10%) were interpreted as having exert some level of effect on the dependent variable.

CHAPTER FOUR

RESULTS AND DISCUSSIONS

4.1 Chapter Overview

The chapter provides outcome displayed in tabular formats and commentary provided under each. The first part provided results on the summary statistics of the variables used in the study. Specifically, the descriptive statistics (mean, standard deviations) were provided. This was followed by Pearson's correlation coefficient as preliminary stages of analysis. Outcome based on the main objectives of the study were then provided.

4.2 Descriptive Statistics (Summary Statistics)

In all, 15 firms were sampled for the study. Five years financial reports were compiled on the main variables of the study from the 15 firms, thus, 2018 through to 2022. This indicates a total of 75 outcomes for the study.

4.2.1 Descriptive statistics on Constructs used to compute the variables for the study

Initial descriptive statistical results were provided on the constructs used to compute the main variables (including control variables) of the study. The outcomes are as shown below:

Table 4.2.1.1 Firm Age

Observation	Mean	St Deviation	Min. Age	Max. Age
75	37.133	18.866	1	71

Source: Researcher (with data sourced from Ghana Stock Exchange), 2023

Table 4.2.1 indicate that the minimum age of the firms used is a year while the oldest firm has been in existence for 71 years now. The mean age of firms used in the study was 37.133 years with standard deviation of 18.886.

Table 4.2.1.2 Net Income (in cedis, ₵) of firms listed in GSE for the past 5 years

Year	Mean (₵)	N	Std. Deviation	Minimum	Maximum
2018	92935044.80	15	199495642.329	79091	632152000
2019	41306397.27	15	89069618.000	95620	333290000

2020	47904518.87	15	119530500.759	123817	456279000
2021	53188873.33	15	137075603.354	214176	526912000
2022	59855075.00	15	162660459.402	340496	631477000
Total	59037981.85	75	143606074.045	79091	632152000

Source: Researcher (with data sourced from Ghana Stock Exchange), 2023

Table 4.2.1.2 result indicates a mean (\bar{x}) income for the firms in 2018 is ₵92935044.80 with standard deviation (σ) of ₵ 199495642.329. 2019 average income recorded was ₵41306397.27 with standard deviation (σ) of ₵ 89069618.000. 2020 mean income of the 15 firms was ₵47904518.87 with standard deviation of (σ) 119530500.759. Average income of ₵53188873.33 and ₵59855075.00 were recorded for the 2021 and 2022 financial years respectively. The Table indicates that the average revenue of the firms fluctuated over the years, with the highest average in 2022 (thus ₵59,855,075.00) and the lowest in 2019 (thus ₵41,306,397.27). The standard deviation is relatively high, indicating considerable variability in revenue among the firms each year. The minimum and maximum revenue values show a wide range of performance among the firms in each year and across the entire dataset

Table 4.2.1.3 Total Asset (Firm Size proxy) of firms listed in GSE for the past 5 years

Year	N	Mean (₵)	Std. Deviation	Minimum	Maximum
2018	15	92935044.80	199495642.329	79091	632152000
2019	15	41306397.27	89069618.000	95620	333290000
2020	15	47904518.87	119530500.759	123817	456279000
2021	15	53188873.33	137075603.354	214176	526912000
2022	15	59855075.00	162660459.402	340496	631477000
Total	75	59037981.85	143606074.045	79091	632152000

Source: Researcher (with data sourced from Ghana Stock Exchange), 2023

Table 4.2.1.3 indicates the mean (average) total assets for all 15 firms across the given years are as follows; 2018 amount recorded was ₵92,935,044.87, for 2019 recorded figure was ₵41,306,397.27. ₵47,904,518.87, ₵53,188,873.33 and ₵59,855,075.00 were recorded for 2020, 2021 and 2022 respectively. Total (across all years) was ₵59,037,981.85 with total standard deviation (across all years) as ₵143,606,074.05. The average total assets of the firms

varied over the years, with the highest average in 2022 (C59,855,075.00) and the lowest in 2019 (C41,306,397.27). The standard deviation indicates considerable variability in total assets among the firms each year. The minimum and maximum total assets values show a wide range of financial strength among the firms in each year and across the entire dataset.

Table 4.2.1.4 Total Equity of firms listed in GSE for 5 years

Year	N	Mean (¢)	Std. Deviation	Minimum	Maximum
2018	15	39378548.27	80047388.515	58752	295141000
2019	15	24552666.87	38543727.378	76851	125479804
2020	15	23822692.40	39253122.792	99634	143322231
2021	15	18978459.60	42941817.400	184629	169549465
2022	15	25794595.80	52376857.474	26878	196964698
Total	75	26505392.59	51962455.732	26878	295141000

Source: Researcher (with data sourced from Ghana Stock Exchange), 2023

Table 4.2.1.4 indicates the mean (average) total equity for the sampled listed firms across the given 15 years is as follows: 2018 of ¢39,378,548.27, 2019 of ¢24,552,666.87.

¢23,822,692.40, ¢18,978,459.60 and ¢25,794,595.80 were the average total equities for 2020, 2021 and 2022. Total (across all years) of equity was ¢26,505,392.59 with an overall standard deviation of ¢51,962,455.73. The average total equity of the listed firms fluctuated over the 15-year period, with the highest average in 2018 (¢39,378,548.27) and the lowest in 2021 (of ¢18,978,459.60). The standard deviation indicates significant variability in total equity among the listed firms each year. The minimum and maximum total equity values show a wide range of financial strength among the listed firms in each year and across the entire dataset.

Table 4.2.1.5 Shareholders' Equity of firms listed in GSE for 5 years

Year	N	Mean (¢)	Std. Deviation	Minimum	Maximum
2018	15	15578425.53	32161958.282	50527	109450758
2019	15	16612984.80	33415897.599	57657	111272741
2020	15	18811487.07	37322165.576	28144	120501326
2021	15	22183363.80	44095612.404	33685	144646921
2022	15	23617497.00	47894582.509	49485	158980505

Total	75	19360751.64	38498065.982	28144	158980505
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Source: Researcher (with data sourced from Ghana Stock Exchange), 2023

Table 4.2.1.5 indicates the mean (average) Shareholders' Equity for the 15 firms across the given 5 years is as follows: ₵15,578,425.53, ₵16,612,984.80, ₵18,811,487.07, ₵22,183,363.80 and ₵23,617,497.00 for 2018 to 2022 respectively. The overall mean Shareholders' equity recorded was ₵19,360,751.64 with standard deviation of ₵38,498,065.982. Shareholders' Equity represents the residual interest in the assets of a company after deducting liabilities. The average Shareholders' Equity varied over the 5-year period, with the highest average in 2022 and the lowest in 2018.

Table 4.2.1.6 Current asset of firms listed in GSE for the past 5 years

Year	N	Mean (₵)	Std. Deviation	Minimum	Maximum
2018	15	48153614.40	148333581.240	8223	582286000
2019	15	28110210.40	73702993.683	10618	289317000
2020	15	22520276.07	42788816.553	22832	164153000
2021	15	27927247.33	55340910.534	139104	214665000
2022	15	30455442.73	60921841.896	150977	228867000
Total	75	31433358.19	83042554.491	8223	582286000

Source: Researcher (with data sourced from Ghana Stock Exchange), 2023

Table 4.2.1.6 indicates the mean (average) current assets for the listed firms across the given 5 years is as follows: 2018 of ₵48,153,614.40, 2019 of ₵28,110,210.40 and 2020 of ₵22,520,276.07. An amount of ₵27,927,247.33 and ₵30,455,442.73 were recorded for 2021 and 2022 respectively. Overall minimum and maximum values recorded were ₵8,223, and ₵582,286,000 respectively while total mean (across all years) was ₵31,433,358.19 with standard deviation of ₵83,042,554.49. The average current assets of the listed firms varied over the 5-year period, with the highest average in 2022 (₵30,455,442.73) and the lowest in 2020 (₵22,520,276.07). The standard deviation indicates a significant degree of variability in current assets among the listed firms each year. The minimum and maximum current assets values

show a wide range of liquidity and financial health among the firms in each year and across the entire dataset.

Table 4.2.1.7 Current liability of firms listed in GSE for 5 years

Year	N	Mean (¢)	Std. Deviation	Minimum	Maximum
2018	15	52536280.47	112221107.708	8276	418394000
2019	15	58434788.27	116763821.734	10290	399375000
2020	15	57478619.47	104701300.823	10087	297334000
2021	15	56266981.47	118688812.942	4102	346541534
2022	15	59607040.07	116975171.060	5779	345406000
Total	75	56864741.95	110885940.115	4102	418394000

Source: Researcher (with data sourced from Ghana Stock Exchange), 2023

Table 4.2.1.7 indicates the mean (average) current liabilities for the selected 15 firms across the given 5 years are as follows: ¢52,536,280.47, ¢58,434,788.27 and ¢57,478,619.47 for 2018, 2019 and 2020 respectively. An amount of ¢56,266,981.47 and ¢59,607,040.07 was recorded for 2021 and 2022 respectively. Overall minimum and maximum values recorded were ¢4,102, and ¢418,394,000 respectively, while an overall mean (across all years): was ¢56,864,741.95 with the standard deviation of ¢110,885,940.12. The average current liabilities of the selected firms fluctuated over the 5-year period, with the highest average in 2022 (¢59,607,040.07) and the lowest in 2021 (¢56,266,981.47). The standard deviation indicates considerable variability in current liabilities among the selected firms each year. The minimum and maximum current liabilities values show a wide range of short-term obligations among the firms in each year and across the entire dataset.

Table 4.2.1.8 Total Debt of firms listed in GSE for the past 5 years

Year	N	Mean (¢)	Std. Deviation	Minimum	Maximum
2018	15	124222677.80	224452753.752	13054	726490000
2019	15	121311759.33	207164121.792	16049	648664427

2020	15	113516523.20	192430575.962	11081	658002486
2021	15	81860226.13	191873433.268	14183	650814196
2022	15	931433306.53	3391612637.484	15318	13177581000
Total	75	274468898.60	1522320583.047	11081	<u>13177581000</u>

Source: Researcher (with data sourced from Ghana Stock Exchange), 2023

Table 4.2.1.8 indicates the mean (average) total debt for the sampled 15 firms across the given 5 years are as follows: ₵124,222,677.80, ₵121,311,759.33 and ₵113,516,523.20 for 2018, 2019 and 2020 respectively. 2021 and 2022 recorded ₵81,860,226.13 and ₵931,433,306.53 respectively. Overall minimum and maximum values recorded were ₵11,081, and ₵13,177,581,000 respectively with mean value of ₵274,468,898.60 and a standard deviation of ₵1,522,320,583.05. The average total debt of the sampled firms varied over the 5-year period, with the highest average in 2022 (₵931,433,306.53) and the lowest in 2021 (₵81,860,226.13). The standard deviation indicates significant variability in total debt among the sampled firms each year. The minimum and maximum total debt values show a wide range of debt levels among the firms in each year and across the entire dataset.

4.2.2 Descriptive statistics on the main variables for the study

The following study variables were computed for inferential statistical analysis; Return on equity, return on asset, debt to asset ratio, debt to equity ratio and Liquidity or current ratio.

The descriptive statistical results of the above variables are as shown below:

Table 4.2.2.1 Return on Assets (ROA) of firms listed in GSE for the past 5 years

Year	N	Mean	Std. Deviation	Minimum	Maximum
2018	15	1.0413443	0.93827260	0.07376	2.99419
2019	15	0.9264742	1.00260504	0.06556	3.23563
2020	15	0.8441271	0.93492417	0.06599	2.83661
2021	15	0.8759892	0.99802812	0.00159	3.02832
2022	15	1.1052716	1.45042708	0.00285	4.33005
Total	75	0.9586413	1.05761178	0.00159	4.33005

Source: Researcher (with data sourced from Ghana Stock Exchange), 2023

Table 4.2.2.1 indicates the mean (average) Return on Assets (ROA) for the sampled 15 firms across the given 5 years is as follows: 1.0413443, 0.9264742 and 0.8441271 for 2018, 2019 and 2020 respectively. 2021 and 2022 recorded values of 0.8759892 and 1.1052716 respectively. Overall mean value recorded was 0.9586413 with standard deviation of 1.05761178 while overall minimum and maximum ROA recorded were 0.00159 and 4.33005 respectively. The average Return on Assets (ROA) of the sampled firms varied over the 5-year period, with the highest average in 2022 (1.1052716) and the lowest in 2020 (0.8441271). The standard deviation indicates a significant variability in ROA among the sampled firms each year. The minimum and maximum ROA values show a wide range of profitability levels among the firms in each year and across the entire dataset.

Table 4.2.2.2 Return on Equity (ROE) of firms listed in GSE for the past 5 years

Year	N	Mean	Std. Deviation	Minimum	Maximum
2018	15	151.5101159	553.71936863	.25824	2152.69567
2019	15	271.5258647	1029.54874182	.25553	3993.07511
2020	15	918.2248568	3534.95696620	.11328	13696.31386
2021	15	1047.4597972	4037.55326485	.00333	
		15642.33338			
2022	15	859.2686160	3292.53334079	.00705	12760.97807
Total	75	649.5978501	2809.37911545	.00333	<u>15642.33338</u>

Source: Researcher (with data sourced from Ghana Stock Exchange), 2023

Table 4.2.2.2 indicates the mean (average) Return on Equity (ROE) for the sampled 15 firms across the given 5 years is as follows: 151.5101159, 271.5258647 and 918.2248568 for 2018, 2019 and 2020 respectively. 1047.4597972 and 859.2686160 were respectively recorded for 2021 and 2022. The average ROE was 649.5978501 for the 15 firms for the 5 periods with the total standard deviation of ROE as 2809.37911545. The average ROE varies significantly over the 5-year period, with the highest average in 2021 and the lowest in 2018.

Table 4.2.2.3 Debt to assets ratio (DTAR) of firms listed in GSE for the past 5 years

Year	N	Mean	Std. Deviation	Minimum	Maximum
2018	15	0.5512348	0.37502686	0.05776	1.27262
2019	15	0.5567945	0.36138219	0.02201	1.15350
2020	15	0.7403398	0.31220283	0.03374	1.20956
2021	15	0.4884620	0.54734229	0.01282	2.12238
2022	15	6.3646983	23.23822116	0.00863	90.35890
Total	75	1.7403059	10.37868441	0.00863	90.35890

Source: Researcher (with data sourced from Ghana Stock Exchange), 2023

Table 4.2.2.3 indicates the mean (average) Debt to Asset Ratio for the selected 15 firms across the given 5 years are as follows: 0.5512348, 0.5567945 and 0.7403398 for 2018, 2019 and 2020. DTAR values for 2021 and 2022 are 0.4884620 and 6.3646983 respectively. The average mean value of DTAR was 1.7403059 with the standard deviation of 10.37868441. The overall minimum and maximum DTAR recorded were 0.00863 and 90.35890 respectively. The average Debt to Asset Ratio of the selected firms varied over the 5-year period, with the highest average in 2022 (6.3646983) and the lowest in 2021 (0.4884620). The standard deviation indicates substantial variability in the Debt to Asset Ratio among the selected firms each year. The minimum and maximum Debt to Asset Ratio values show a wide range of leverage levels among the firms in each year and across the entire dataset.

Table 4.2.2.4 Debt to Equity ratio (DTER) of firms listed in GSE for the past 5 years

Year	N	Mean	Std. Deviation	Minimum	Maximum
2018	15	3.0551930	2.67382444	0.21145	8.58207
2019	15	3.5336734	2.87957063	0.09913	8.58249
2020	15	3.6975331	3.24840532	0.03491	10.11475
2021	15	2.0853017	3.39450691	0.04953	12.04626
2022	15	46.5796364	128.11542807	0.00862	460.80668
Total	75	11.7902675	58.47520639	0.00862	460.80668

Source: Researcher (with data sourced from Ghana Stock Exchange), 2023

Table 4.2.2.4 indicates the mean (average) debt to equity ratio across the given years is as follows: 3.0551930, 3.5336734 and 3.6975331 for 2018 to 2020. 2.0853017 and 46.5796364

were recorded for 2021 and 2022 respectively. The overall total debt to equity ratio was 11.7902675 with a standard deviation of 58.47520639. The minimum and maximum debts to equity ratio recorded were 0.00862 and 460.80668 respectively. The average values vary significantly over the given years, with the highest average in 2022 (46.5796364) and the lowest in 2021 (2.0853017).

Table 4.2.2.5 Liquidity ratio (Current Ratio) of firms listed in GSE for the past 5 years

Year	N	Mean	Std. Deviation	Minimum	Maximum
2018	15	8.0686635	24.56348627	.09586	96.62436
2019	15	5.1002396	11.09538800	.03966	43.37986
2020	15	7.3228242	16.46431169	.06788	61.58942
2021	15	59.9706723	220.45927236	.06677	856.74183
2022	15	35.8851121	124.30708495	.06826	484.73006
Total	75	23.2695023	113.03870655	.03966	856.74183

Source: Researcher (with data sourced from Ghana Stock Exchange), 2023

Table 4.2.2.5 indicates the mean (average) Current Ratio for the sampled 15 firms across the given 5 years is as follows; 8.0686635, 5.1002396 and 7.3228242 for 2018 to 2020 respectively. 59.9706723 and 35.8851121 were recorded for 2021 and 2022 respectively. The overall mean current ratio recorded by the sampled firms for the past 5 years is 23.2695023. The Current Ratio is a liquidity ratio that measures a company's ability to cover short-term obligations with its short-term assets. The average Current Ratio varies significantly over the 5-year period, with the highest average in 2021 (59.9706723) and the lowest in 2019 (5.1002396). The standard deviation is relatively high, indicating a wide variability in the Current Ratio among the firms each year

4.3 Linear Association between the main variables (Pearson's correlation Coefficient)

Pearson's correlation Coefficient was run to test the level of linear association between each pair of variable. The outcome is as shown below:

Table 4.3.1 Pearson's Correlation Coefficient using Independent and control Variables

	<u>ROA</u>	<u>ROE</u>	<u>DTAR</u>	<u>DTER</u>	<u>LIQR</u>	<u>FSIZE</u>	<u>F Age</u>
ROA	1						
ROE	0.3351	1					
DTAR	0.3718	0.5185	1				
DTER	0.1280	0.2163	0.4260	1			
LIQR	-0.1604	-0.0464	-0.0312	-0.0362	1		
FSIZE	-0.2694	0.1488	0.0208	-0.0299	-0.1069	1	
F Age	0.5408	-0.1032	-0.0516	0.0086	-0.1155	-0.5104	1

Source: Researcher (with data sourced from Ghana Stock Exchange), 2023

Table 4.3.1 outcome ROA has a moderate positive correlation of 0.5408 with Firm Age. ROE has a moderate positive correlation of 0.5185 with DTAR (Debt to Asset Ratio). Firm Size has a moderate negative correlation with firm age (thus with a coefficient of -0.5104). ROA exerts weak positive association with ROE, DTAR, and DTER and exerts weak negative correlation with LIQR and Firm size. All the other pairs exert weak negative or positive linear associations between each other.

4.5 The effects of leveraging and liquidity on financial performance of listed firms in the Ghana Stock Exchange

The first and second objectives aimed to investigate the effects of leveraging and liquidity on financial performance of listed firms in the Ghana Stock Exchange.

4.5.1 Using ROA as a proxy for financial performance of listed firms in the Ghana Stock Exchange

Table 4.5.1 Effects of leveraging and liquidity on ROA as a measure of firms' financial performance

Variables	Fixed Effect			Random Effect		
	Coefficient	St Error	p-value	Coefficient	St Error	p-value
DTAR	0.0232***	0.0059	0.000	0.0274***	0.0057	0.000
DTER	0.0001	0.0009	0.898	-0.0002	0.0009	0.836
LIQR	0.0001	0.0005	0.815	0.0001	0.0005	0.791
Firm Size	3.22e-09***	8.83e-10	0.001	-2.02e-09***	7.18e-10	0.005
Firm Age	-0.0330	0.0315	0.300	0.0131	0.0119	0.271
Constant	2.5490*	1.1750	0.034	0.6885	0.5292	0.193
Observation = 75			Observation = 75			
Groups =15			Groups =15			
F(5, 55) = 13.43			Wild (Ch Sq. 5) = 63.35			
Prob. = 0.000			Prob. = 0.000			
R. Square = 0.560			R. Square = 0.623			
Sigma-u = 1.3224			Sigma-u = 0.8204			
Sigma-e = 0.3670			Sigma-e = 0.3670			
rho = 0.9285			rho = 0.8332			
Hausman's p-value 0.0103						

*=10%, **=5% and ***=1% conventional significance levels;

Dep. Variable= ROA

Hausman's test was performed to choose between random effect and fixed effect and the outcome indicates that the fixed effect is appropriate. Hence from Table 4.5.1 results indicate an R-square value of 0.560 in the fixed effect regression outcome. The value indicate that about 56% of the variations in Return on Assets (as a proxy for financial performance of firms) can be explained by the independent and control variables used in the regression. The F-value recorded from the fixed effect regression model is 13.43 and it is significant at 1%.

Table 4.5.1 results indicate that debt to asset ratio, as an independent variable, recorded a coefficient of 0.0232 from the fixed effect regression model. This value indicate that debt to assets ratio (a proxy for firm financial leveraging) exerts positive influence on return on assets (as a proxy for financial performance of firms). The outcome is significant at 1% significant level. It shows that a unit increase in the debt to assets ratio of the firms listed in the GSE will

cause $\phi 0.0232$ in the return on assets (as a proxy for financial performance of firms). This finding conforms to the conclusions of Supriati et al., (2019) in their study entitled “Examining the Impact of Leverage and Liquidity on Corporate Performance (A Case Study on Food and Beverage Companies in Indonesia)” as they concluded that “indirect leveraging positively impacts on financial performance of firms”. It however deviates from the findings of Prempeh et al., (2018) and Miroga & Shimenga, (2019) that concluded that leverage negatively impacts on financial performance of firms.

Table 4.5.1 results indicate that debt to equity ratio, as an independent variable recorded a coefficient of 0.0001. This outcome is not significant at any of the three significant levels as the p-values recorded were 0.898 and 0.836 from both models respectively. The finding, however, does not conform to several past empirical results such as Saleh et al., (2021) and Miroga & Shimenga, (2019). For instance, Miroga & Shimenga, (2019) in their study entitled “influence of financial leverage and liquidity on financial performance of manufacturing firms listed at the Nairobi Securities Exchange” concluded that leverage exerts significantly negative impacts on financial performance of firms.

Table 4.5.1 results indicate that liquidity ratio, as an independent variable, recorded a coefficient of 0.0001 in the fixed effect model. The value obtained is not significant considering the 3 conventional significant levels (1%, 5% and 10%). The above trend of result conforms to some empirical results (example: Miroga & Shimenga, 2019; Prempeh et al., 2018; Saleh et al., 2021; Supriati et al., 2019; Zhongming et al., 2020). For instance, Saleh et al., (2021) in their study on the topic “The Impact of Liquidity and Leverage on Profitability in Industrial Sector in Jordan concluded that liquidity exerts positive but insignificant effects on financial performance of firms. It equally conforms to the empirical

conclusions of Zhongming et al., (2020) in their study on “the effect of credit risk and liquidity risk on the performance of commercial Banks in Ghana.

Table 4.5.1 results indicate that firm size, as a control variable, recorded coefficients of $3.22e-09$ from the fixed effect regression model. This value is significant at 1percent significant level given p-value less than 1%. The value indicate that a unit increase in the size of the firms (measured by their total assets) could cause $-0.322e-09$ units decrease in their return on assets. The trend of the result deviates from the findings of Akram et al., (2021) in their study on the topic “the impact of firm size on profitability – a study on the top 10 cement companies of Pakistan” that concluded that firm size measured using firms’ total assets impacts positively on firms’ profitability measured using Return on Assets.

Firm age, as a control variable, recorded coefficients of -0.0323 from the fixed and random effect regression models respectively. This value, is not-significant considering the 3 conventional significant levels (1%, 5% and 10%). This observation deviates from the empirical findings of Nguyen & Thanh, (2022) that found that older firms are more likely to benefit from higher performance based on economics of scale.

4.5.2 Using ROE as a proxy for financial performance of listed firms in the Ghana Stock Exchange

Table 4.5.2 Effects of leveraging and liquidity on ROE as a measure of firms’ financial performance

Variables	Fixed Effect			Random Effect		
	Coefficient	St Error	p-value	Coefficient	St Error	p-value
DTAR	-39.8383***	11.7069	0.001	-130.222***	30.4487	0.000
DTER	-0.3487	1.8148	0.848	0.02765	5.4007	0.996
LIQR	-0.5252	1.0442	0.617	0.4452	2.5934	0.864

Firm Size	-0.00002***	1.75e-06	0.000	1.63e-06	1.51e-06	0.281
Firm Age	168.3179**	62.6561	0.010	-1.8602	17.9729	0.918
Constant	-2406.311	2334.399	0.307	280.3455	854.9023	0.743

Observ.=75	Groups = 15	Observ.=75	Groups = 15
F(5, 55) = 45.48	Prob. = 0.000	Wild (Ch Sq. 5) = 27.95	Prob. = 0.000
R. Square = 0.513		R. Square = 0.680	
Sigma-u = 8801.419		Sigma-u = 837.681	
Sigma-e = 729.1964	rho = 0.993	Sigma-e = 729.196	rho = 0.964
Hausman's p-value 0.0058			

*=10%, **=5% and ***=1% conventional significance levels

The Hausman's statistical test indicates that fixed effect is appropriate as the null hypothesis that random effect is appropriate is rejected. Hence Table 4.5.2 results indicate an R-square value of 0.513 for the fixed regression model. This value can be interpreted as the independent variables and control variables used in the fixed effect regression model could explain 51.3% of the variations in Return on Equity (as a proxy for financial performance of firms). The F-value recorded from the fixed effect regression model is 45.48 and it is significant at 1% significant level.

Table 4.5.2 indicate a coefficient value for debt to asset ratio (as an independent variable) of - 39.838 for the fixed effect regression model. This outcomes is significant at 1% significance level and it indicates that a unit increase in the debt to asset ratio of the sampled Listed Firms in the Ghana Stock Exchange will cause 39.838 units decrease in their Return on Equity (as a proxy for financial performance of firms). The finding is in harmony with empirical studies conducted by Saleh et al., (2021) that concluded that leverage negatively (and significantly) impacts on financial performance of firms. It however, does not conform to the conclusions of

Supriati et al., (2019) that concluded that the positive significant effects of leverage on financial performance of firms.

Table 4.5.2 results indicate that debt to equity ratio recorded a coefficient of -0.3487 for fixed effect regression model. The value is however not significant at the three conventional significant levels as the p-values recorded was 0.848. The result based on the fixed effects as indicated above partially conforms to the empirical conclusions of Miroga & Shimenga, (2019) in their study on the title “influence of financial leverage and liquidity on financial performance of manufacturing firms listed at the Nairobi Securities Exchange” as they concluded on the negative effect of leverage on firm performance. However a deviation is the level of significance as the current study found the effect to be insignificant whiles the empirical study found it to remain significant.

Liquidity ratio (as an independent variable) recorded a coefficient value of -0.5252 for the fixed effect regression model. This value is however not significant at the three conventional significant levels in both regression models as the p-values recorded was 0.617. This finding is in line with the empirical conclusions of Sudiyatno & Suwarti (2022) on the topic “the role of liquidity in determining firm performance: an empirical study on manufacturing companies in Indonesia” as they concluded that it exerts negative effect. However, the deviation of the present findings from the past empirical study is the level of significance as the current study found the effect to be insignificant whiles the empirical study found it to remain significant. The findings however deviates from several empirical results (such as Prempeh et al., 2018; Saleh et al., 2021; Supriati et al., 2019; Zhongming et al., 2020).

From Table 4.5.2, Firm size (measured using total asset) exert significantly negative effects on return on equity (used as a proxy for firms' financial performance) in the fixed effect model. The coefficients recorded was -0.00002 with p-value of 0.000. The outcome from the fixed effect indicates that a unit increase in the size of the firms listed in the GSE will cause 0.00002 units decrease in their return on equity. The outcome from the fixed effect deviates from the empirical conclusions of Salehi et al., (2020) on the topic "the effect of intellectual capital on corporate Performance" as they concluded that firm size does not exert any significant effect on financial performance of firms. Equally, from Table 4.5.2 Firm age, as a control variable exert significant positive effects on return on equity (used as a proxy for firms' financial performance) in the fixed effect model. The coefficient recorded was 168.3179. The outcome indicates that firm age exerts 168.317 units increase in the firms return on equity. This outcome is significant at 5% significant level.

4.6 Interactive effect of leveraging and liquidity on financial performance of listed firms in the Ghana Stock Exchange

The last research objective is to analyse the interactive effect of leveraging and liquidity on financial performance of listed firms in the Ghana Stock Exchange.

4.6.1 Using ROA as a proxy for financial performance of listed firms in the Ghana Stock Exchange

Table 4.6.1 The interactive effect of leveraging and liquidity on ROA as a measure of firms' financial performance

Variables	Fixed Effect			Random Effect		
	Coefficient	St Error	p-value	Coefficient	St Error	p-value
DTAR*LIQR	0.02037***	0.0073	0.007	0.02621***	0.00738	0.000
DTER*LIQR	-0.0012*	0.0070	0.084	-0.0017**	0.00724	0.016
Firm Size	-4.18e-09***	8.79e-10	0.000	-2.54e-09***	7.48e-10	0.001
Firm Age	-0.0009	0.0326	0.979	0.01525	0.0125	0.223

Constant	1.4851	1.2365	0.235	0.6721	0.5623	0.232
Observ. =75	Groups= 15			Observ. =75	Groups= 15	
F(4,56) =	12.71	Prob. = 0.000		Wild (Ch Sq. 4) =	42.96	Prob. = 0.000
R. Square =	0.609			R. Square =	0.626	
Sigma-u =	1.1893			Sigma-u =	0.8316	
Sigma-e =	0.39245	rho =0.90181		Sigma-e =	0.39245	rho = 0.8179
Hausman's p-value	0.00350					

=10%, **=5% and *=1% conventional significance levels*

Table 4.6.1 results indicates that the Hausman's test p-value indicates that we reject the null hypothesis that the random effect is appropriate for the study. This indicates that fixed effect result fit the model for its interpretation. Table 4.6.1 result indicates R-Square value of 0.609 for the fixed effect regression model. It indicates that 60.9% of the variations in return on assets (a proxy of firms financial performance) of listed firms in the GSE can be explain by the variables used in the model. The F-statistics value recorded in the Fixed effect model is 12.71 which is significant at 1% significant level.

Table 4.6.1 result indicates that interacting between debt to asset ratio and liquidity ratio exerts positive effects on return on assets (as a proxy for firms' performance). It indicates coefficients of 0.02037 and 0.02621 for the fixed effect regression model with corresponding p-value of 0.007 indicating both are significant at 1% significant level. The outcomes indicate that a unit increase in debt asset ratio with its commensurate increase in liquidity ratio will cause ₦0.02037 increase in return on assets (as a proxy for firms' performance) of list firms in the GSE. This finding is a unique contribution of the study and remains a novel contribution of this study to literature on the effects of leverage and liquidity on firm performance.

Table 4.6.1 result indicates that interacting debt to equity ratio and liquidity ratio exert negative significant effects on return on assets (as a proxy for firms' performance). It indicates

coefficients of -0.0012 for the fixed effect regression model with corresponding pvalue of 0.084 indicating the value is significant at 10%. The outcome indicates that a unit combined increase in debt to equity ratio and liquidity ratio will cause 0.0012 units decrease in the firms' Return on assets.

Table 4.6.1 results indicate an insignificant effect of firm age on return on assets (as a proxy for firms' performance). It indicates coefficients of -0.009 for fixed effect regression model with corresponding p-value of 0.979 indicating it is insignificant.

Table 4.6.1 result indicates a negative and significant effect of firm size on return on assets (as a proxy for firms' performance). It shows a coefficient of -4.18e-09 from the fixed effect regression model with their corresponding p-values of 0.000 indicating it remain significant at 1%. The finding indicates that a unit increase in the size of the listed firms in the GSE will cause -4.18e-09 decrease in the return on equity of the firms. This finding deviates from the empirical findings conclusions of Salehi et al., (2020) as they concluded that firm size does not exert any significant effect on financial performance of firms. It equally deviates from the conclusions of Sudiyatno & Suwarti, (2022) that found firm size to exert significantly positive effects on firms' financial performance.

Table 4.6.2 The interactive effect of leveraging and liquidity on ROE as a measure of firms' financial performance

Variables	Fixed Effect			Random Effect		
	Coefficient	St Error	p-value	Coefficient	St Error	p-value
DTAR*LIQR	-30.3188**	14.491	0.0041	-7.0519	20.2010	0.727
DTER*LIQR	2.0093	1.3983	0.156	0.2273	1.9728	0.908
Firm Size	-0.00002***	1.75e-06	0.000	-0.00002***	2.17e-06	0.000
Firm Age	112.3987*	64.6951	0.088	-66.3357	40.8034	0.104
Constant	-609.623	2454.638	0.805	5139.131***	1819.849	0.005

Observ. = 75 Groups=15
 F(4,26) = 47.86 Prob. = 0.000
 R. Square = 0.620
 Sigma-u = 7572.6367
 Sigma-e = 779.0713 rho = 0.9895
 Hausman's p-value = 0.0182

Observ. = 75 Groups=15
 Wild (Ch Sq. 4) = 59.45 Prob. = 0.000
 R. Square = 0.516
 Sigma-u = 2110.9978
 Sigma-e = 779.0713 rho = 0.8801

*=10%, **=5% and ***=1% conventional significance levels

Table 4.6.2 result indicates that Hausman's p-value is very small and as such, we reject the null hypothesis that the fixed effect is appropriate for the model. The R-Square value recorded was 0.620 for the fixed effect model. It indicates that 62% of the variations in return on equity (a proxy of firm's financial performance) of listed firms in the GSE can be explain by the variables used in the models. The F-statistics value recorded in the Fixed effect model is 47.86 and is significant at 1% significant level.

Table 4.6.2 result indicates that the interacting debt to asset ratio and liquidity ratio exerts negative effects on return on equity (as a proxy for firms' performance). It indicates coefficients of -30.3188 for the fixed effect regression model with corresponding p-value of 0.041 indicating it is significant at 5% significant level. The outcomes indicate that a unit increase in debt equity ratio with its commensurate increase in liquidity ratio will cause €30.318 (based on the fixed effect model) decrease in return on equity (as a proxy for firms' performance) of list firms in the GSE. This finding is a unique contribution of the study and remains a novel contribution of this study to literature on the effects of leverage and liquidity on firm performance.

Table 4.6.2 result indicates that interacting debt to equity ratio and liquidity ratio does not exert any significant effect on return on equity (as a proxy for firms' performance). It indicates

coefficient of 2.0092 for the fixed effect regression model with corresponding p-value of 0.156 indicating it is not significant considering the three conventional significant levels.

Firm size recorded a coefficient of -0.00002 with corresponding p-value of 0.000 indicating it is significant at 1 percent significant level. It indicates that a unit increase in the firm size of listed firms in the GSE will cause 0.0002 units decrease in their return on equity in the presence of a commensurate increase in their leveraging and liquidity. This finding deviates from the empirical conclusions of Sudiyatno & Suwarti, (2022) that found that firm size to exert significantly positive effects on firms' financial performance.

Firm age recorded a coefficient value of 112.3987 for the fixed effect regression models with corresponding p-value of 0.088 indicating it is significant at 10% significant level. It indicates that as the firms' ages by a year, their return on equity increases by 112.3987 units This observation is in line with the empirical findings of Nguyen & Thanh, (2022) that found that older firms are more likely to benefit from higher performance based on economics of scale.

CHAPTER FIVE

SUMMARY OF FINDINGS, CONCLUSIONS AND RECOMMENDATION

5.1 Introduction

This chapter provides brief presentation of major and important findings. Overall conclusion of the chapter was also provided while the chapter ended with policy implementation recommendations and suggestions for future studies.

5.2 Summary of Findings

The main aim of the study is to “assess the effect of leveraging and liquidity on financial performance of listed firms in the Ghana Stock Exchange”. The first objective of the study is

to investigate the effects of leveraging on financial performance of listed firms in the Ghana Stock Exchange. Two main proxies were used to measure firm leveraging; debt to asset ratio and debt to equity ratio. The results revealed that debt to asset ratio exerts significantly positive influence on return on assets (as a proxy for financial performance of firms) while it exerts significantly negative influence on return on equity (as a proxy for financial performance of firms). Debt to equity ratio was however found not to exert any significant influence on return on assets (as a proxy for financial performance of firms) nor on return on equity (as a proxy for financial performance of firms).

The second specific objective is to examine the effects of liquidity on financial performance of listed firms in the Ghana Stock Exchange. Liquidity ratio was used as a proxy to measure firms' liquidity. The study found that liquidity does not exert any significant effects on return on asset and return on equity confirmed from the two regression models (fixed effect and random effect). Moreover, the study revealed that firm size as a control variable exerts significantly positive effect on financial performance of firms measured by return on asset while it exerts negative effects on return on equity. Results for firm age revealed it does not exert any significant effects on assets while it exerts significantly positive impacts on return on equity.

The third specific objective is to analyse the interactive effect of leveraging and liquidity on financial performance of listed firms in the Ghana Stock Exchange. The study findings revealed that interacting debt to assets and liquidity ratios of listed firms in the GSE exerts significantly positive effect on their return on asset while it exerts significantly negative effect on return on equity. Furthermore, the interactive effect of debt to equity ratio and liquidity exerts significantly negative effects on return on assets while it does not exert any significant effect

on financial performance (measured by return on equity) of listed firms in the Ghana Stock Exchange. Firm size exerts negative effects on return on assets and equity in the presence of the various interactive variables while firm age exerts positive effects on return on equity in the presence of the various interactive variables.

5.3 Conclusions

The main aim of the study is to “assess the effect of leveraging and liquidity on financial performance of listed firms in the Ghana Stock Exchange”. The research used the quantitative research design with focus on causal comparative research design since the study investigated the effects of leverage and liquidity on performance of firms in the presence of some control variables. The study is rooted in the positivist philosophy as it employed statistical measures to provide results while the study employed the quantitative research approach. The population of the study was all listed firms in the Ghana Stock Exchange till date. In effect, there are 42 listed equities in the GSE and hence, this was used as the accessible population of the study. The study however sampled data from 15 firms represent 35.7% of the entire population of interest. The study gathered yearly data for 5 years (thus 2018 to 2022) from the financial statements of the sampled firms. Results were presented descriptively as well as inferentially using fixed and random effect panel regression models. These models received empirical justification to be relevant in helping minimize omitted variable bias by adjusting for unobserved variables and are time invariant confounders relevant to estimate cause and effect between given variables (Kalantonis, Kallandranis and Sotiropoulos, 2021; Al-Ahdal *et al.*, 2022).

The study concludes that while leverage (using debt to assets) can amplify gains for listed firms in the GSE, it (using debt to equity ratio) also increases the risk because the company must pay

back the debt, regardless of its profitability. Liquidity, in isolation, however, does not exert any significant effect on financial performance of firms. The study further concludes that the interacting effect of leveraging and liquidity on financial performance of firms depends on the specific proxies used in measuring the variables. Thus, while the interactive effect of debt to asset ratio and liquidity exerts positive effects on return on assets, the same interactive effect exerts negative effects on return on equity. Equally, while the interactive effect of debt to liquidity ratio exerts negative effects on return on assets, its effects on return on equity remain insignificant.

5.4 Recommendations

The study recommends that listed firms in the Ghana Stock Exchange should implement a prudent debt management policy that ensures borrowed funds are used for productive purposes. Board of directors and management of listed firms in the GSE should avoid excessive debt that could strain the company's ability to meet debt obligations. They should equally look for opportunities to refinance existing debt at lower interest rates or better terms since lowering the cost of debt can increase profitability and contribute to higher returns on assets.

The study further recommends that management of listed firms in the GSE should optimize working capital management to ensure smooth operations and reduce the need for excessive short-term borrowing. Efficiently managing receivables, payables, and inventory can free up cash for other purposes.

Equally, the study recommends that firms listed in the GSE should conduct a comprehensive analysis of the company's capital structure to identify the optimal debt to equity mix. They

should strive to strike the right balance between debt and equity financing to achieve the highest returns on assets while managing risk effectively.

The study further suggests that listed firms in the GSE should invest in Productive Assets. This can be one by using debt to finance investments in income-generating assets or projects that have the potential to enhance profitability. Consider capital expenditures that will lead to increased cash flows and higher returns on assets over time. They should equally evaluate growth opportunities that can be financed through debt. Expansion into new markets, product lines, or acquisitions may increase the company's overall profitability.

5.5 Suggestions for Future Researchers

The study suggest that future researchers should focus on investigating whether there are threshold effects or tipping points beyond which higher leverage or liquidity or both could exert varied effects (increasing and diminishing returns) on financial performance of listed firms in the GSE. The findings of such studies could help augment the recommendations of this recent study for policy purposes.

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