

**A comparative analysis on the impact of
firm-specific characteristics and
macroeconomic variables on financial
performance and working capital
management of listed companies in
Nigeria**

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North-West University

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DECLARATION

I hereby declare that this thesis, titled “the impact of firm-specific characteristics and macroeconomic variables on financial performance and working capital management of listed companies in Nigeria” is a product of my own research effort, carried out under the supervision of Prof Anet Smit and Prof Martin Botha, in the Faculty of Economic and Management Sciences, North-West University Business School, North-West University South Africa. Acknowledgements were duly made in the references in respect of all sources from which information was generated. In addition, no part of this thesis was presented elsewhere for any award of any certificate. I take the sole responsibility of all errors therein.

DEDICATION

This thesis is dedicated to the Almighty God, my wonderful parents and siblings for their prayers and support throughout the completion of the thesis.

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I would first and foremost like to thank my promoter and co-promoter Prof Anet Smit and Prof Martin Botha, for their guidance, support and encouragement, which enabled me to develop a deeper understanding about the subject. I also appreciate all the staff of North-West University Business School for their support throughout the duration of my studies. Finally, I thank my family and friends for their support and encouragement. May the Almighty God continually reward you all.

ABSTRACT

This study examined the impact of firm-specific characteristics and macroeconomic variables on the financial performance and working capital management of listed companies under the consumer goods sector, the financial sector and the oil and gas sector in Nigeria. The firm-specific characteristics studied comprise firm size, leverage, operating cycle, and sales growth, while the macroeconomic variables studied include inflation rate, exchange rate, and gross domestic product. Secondary sources of data were sourced from the annual reports of the companies listed under the three selected sectors for this study for the period 2013–2022. Seven hypotheses were assessed with the use of multiple regression analysis.

The study's results indicate that the operating cycle has a noteworthy negative effect on the financial performance of consumer goods companies listed in Nigeria. However, firm size, leverage, and sales growth do not have a major influence on financial performance. The results also indicated that sales growth has a favourable and substantial influence, while leverage has an unfavourable but substantial influence on the financial performance of listed financial companies in Nigeria. The size of the firm and the operating cycle do not have a statistically significant influence. Lastly, the findings indicate that the operating cycle positively and significantly affects the financial performance of listed oil and gas companies in Nigeria, whereas leverage has a negative and substantial influence. The influence of firm size and sales growth is negligible.

The analytical findings indicate that the operating cycle has a notable and meaningful influence on the management of working capital in consumer goods companies listed in Nigeria. The effect of leverage and sales growth was shown to be negative and statistically significant, although company size did not have a statistically significant influence. Moreover, the results indicate that firm size has a favourable and substantial influence on the management of working capital in financial companies listed in Nigeria. Conversely, the effect of leverage is shown to be unfavourable but considerable. The influence of the operational cycle and sales growth was found to be negligible. Finally, the recorded data indicate that firm size and leverage have a negative but substantial effect on the management of working capital in listed oil and gas companies in Nigeria.

Conversely, the operating cycle has a positive and significant effect. The effect of sales growth was negligible.

For macroeconomic variables, the study's findings showed that gross domestic product, exchange rate, and inflation rate have no significant impact on the financial performance and working capital management of the listed companies in the consumer goods sector, the financial sector and the oil and gas sector in Nigeria. Lastly, the findings showed that firm-specific characteristics impact the financial performance and working capital management of the oil and gas sector the most, followed by the financial sector, and finally the consumer goods sector. On the other hand, macroeconomic variables do not impact the financial performance and working capital management of the three chosen sectors in Nigeria.

Based on the results obtained from the study, it is recommended that companies should give priority to developing a detailed knowledge of their unique features, such as their size, debt levels, operating cycle, and sales growth. Furthermore, it is recommended that companies enhance their operating cycles by prioritising streamlined supply chain procedures, effective inventory management, and customer-focused initiatives. Additionally, policymakers should prioritise the establishment of a regulatory framework that fosters prudent and purposeful utilisation of debt within the financial sector. Regulatory frameworks may incentivize financial firms to embrace sustainable debt management techniques, therefore promoting enduring stability. Policymakers should prioritise the establishment of a secure business environment that enables companies to devise and execute efficient risk mitigation strategies. Investors are recommended to diversify their portfolios in order to mitigate risks, as they understand that firm-specific features and macroeconomic factors have different effects on various sectors. It is essential for all stakeholders to use sophisticated analytics and engage in continual monitoring and assessment of initiatives in order to adjust to the changing economic environment in Nigeria.

Keywords: Firm-specific characteristics, macroeconomic variables, financial performance, working capital management, oil and gas sector, financial sector, consumer goods sector.

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DEFINITION OF KEY TERMS

CR	=>	Current Ratio
ExcR	=>	Exchange Rate
FE	=>	Fixed Effect
FP	=>	Financial Performance
FZ	=>	Firm Size
GDP	=>	Gross Domestic Product
GLS	=>	Generalised Least Square
InfR	=>	Inflation Rate
IntR	=>	Interest Rate
LEV	=>	Leverage
LIQ	=>	Liquidity
NBS	=>	National Bureau of Statistics
NGX	=>	Nigerian Exchange Group
NSE	=>	Nigerian Stock Exchange
OC	=>	Operating Cycle
OLS	=>	Ordinary Least Square
PCSE	=>	Panels Corrected Standard Errors
RE	=>	Random Effect
ROA	=>	Return on Asset
ROE	=>	Return on Equity
SG	=>	Sales Growth
UnR	=>	Unemployment Rate
VIF	=>	Variance Inflation Factor
WCM	=>	Working Capital Management

CHAPTER 1: INTRODUCTION AND BACKGROUND TO THE STUDY

1.1 General overview

This chapter introduces the reasons and motivation for the study. It provides context to the research and also discusses how the study was carried out. This study investigates the impact of firm-specific characteristics and macroeconomic variables on the financial performance and working capital management of listed companies in Nigeria. As part of the general overview a brief discussion of working capital management, financial performance, macroeconomic variables, and firm characteristics as the prominent concepts in the study, are addressed. After the overview of the concepts, it is then followed by the background to the study, the statement of the problem, research questions, research objectives, and research hypotheses.

1.1.1 Financial performance

Performance is multi-faceted, and the appropriate measure selected to assess financial performance depends on the type of company evaluated and the objectives to be achieved through that evaluation (Egbunike & Okerekeoti, 2018:148). A company's financial performance describes how the company sets a financial goal, and it illustrates the magnitude of the results in a process that has been achieved compared with the company's goals. Financial performance is a determinant of a company's income, profits, and increase in value, as evidenced by the appreciation in the entity's worthiness. Abubakar *et al.* (2018), stated that measures of financial performance could be approached from two angles: First, from the viewpoint of the investor, and second, from the accounting viewpoint. The basic idea of investor returns is that the return should be measured from the perspective of shareholders, for example, by share price and dividend yield.

The performance of any company not only plays a role in increasing the market value of that specific company, but it also leads towards the growth of the whole sector and the overall success of the economy, according to Kazeem (2015). In this regard, sound financial management should be consistent with the drives to improve and increase

profitability, and to meet the goals of the company owners. However, because of challenges in internal and external environments, most companies are unable to meet their goals. In other words, performance is a function of the ability of a company to gain and manage its resources in several different ways so as to develop competitive advantages. Kazeem (2015) stated that an effective and efficient function of the financial sector requires a sound and favourable economic environment in the country. In this era of globalisation, it is imperative for financial institutions to be strongly integrated in the global economy.

1.1.2 Working capital management

Liquidity management (working capital management) has become one of the most important aspects to manage in any business to increase performance (Chaurasiya, 2023:810). Working capital management has to do with the administration of all aspects of current assets, namely cash, marketable securities, stock, and current liabilities. It is the functional area of finance that covers all the current accounts of the company. It is concerned with the adequacy of current assets, as well as the level of risk posed by current liabilities. According to Confidence and Idumesaro (2023:102) working capital management is an aspect of financial management that seeks proper policies for the management of current assets and liabilities, and practically maximises the benefits from managing working capital. Firm managers must know the determinants of working capital when they want to develop an efficient working capital management strategy. Studies have also substantiated the effect of a firm's characteristics and macroeconomic variables on financial performance and working capital management (Egbunike & Okerekeoti, 2018; Sucipto *et al.* 2022; Suseno, 2020; Soukhakian & Khodakarami, 2019; Dioha *et al.* 2018; Panda *et al.* 2021). Effective management of working capital presents a crucial and challenging financing decision that companies have to make in their day-to-day management of operations, which involves taking strategic decisions that depend on some external factors.

Therefore, the firm's characteristics and external factors, such as economic conditions, need to be considered when managers make decisions about investing and financing

working capital. Hossain (2020:114) confirmed that the goal of working capital management is to ensure that the company can continue its operations and that it has sufficient cash flow to satisfy both maturing short-term debts and upcoming operational expenses. In this study, both firm-specific characteristics, as well as macroeconomic variables, were observed and analysed. The firm-specific characteristics (internal factors), such as firm size, leverage, operating cycle, and sales growth were considered. The study also addresses macroeconomic variables (external factors), such as the inflation rate, exchange rate and finally gross domestic product. This focus of firm-specific characteristics and macroeconomic variables was on some specific sectors listed in the Nigerian Exchange Group (NGX), which will be discussed later in the study.

As part of the introductory paragraph, a discussion on financial performance, firm-specific characteristics, macroeconomic variables, and the importance of working capital concludes the general overview.

1.1.3 Firm characteristics

Any company's primary desire is to gain more profit and increase its stakeholders' wealth (Pandiangan *et al.* 2022:3491; Dioha *et al.* 2018:17). However, because of internal and external difficulties, most companies are unable to achieve their objectives. The internal factors that focus on specifications are grouped into financial characteristics and non-financial characteristics, in line with the above description. The financial features are the factors that can be extracted from the financial statements, and company gains and losses. These includes leverage, the operating cycle, firm size, sales growth, among others. Non-financial features are those factors that cannot be derived from the financial statements and the company's gains and losses. This includes the age of the firm (Dioha *et al.* 2018:15; Ehiedu & Imoagwu, 2022:143).

1.1.4 Macroeconomics

Macroeconomics is an area of economics that discusses an economy as a whole rather than an individual market's conduct, structure, efficiency, and decision-making. This involves economies at the global, national, and regional levels (Tsai, 2019:22; Jati &

Salam, 2021:2; Cholewa & Minh, 2021:9). The discipline exemplifies two fields of study: The attempt to understand the causes and effects of short-run fluctuations in national income, and the attempt to understand the determinants of long-term economic development (Tsai, 2019:22). As a framework for judging the economic output of an economy, macroeconomic variables are used. Gross domestic product, exchange rates and inflation rates are among these factors. For the growth of the economy, these economic activities are necessary (Tsai, 2019:22).

1.1.5 Working capital

Working capital is the cash required to run the day-to-day operations of the company (Osuji & Agbada, 2020:229; Oladimeji & Aladejebi, 2020: 28). The investment company's drives on assets made on a short-term basis, and the resources used with maturities under one year represent the actual share of the company's financial position (Kasahun, 2020). Thus, the importance of working capital management relies on the rules of gearing up collections on time and decelerating payments at the right time, which will bring down the risk of insufficient funds to pay for the short-term liabilities, which are the current liabilities (Daniel *et al.* 2020:55). Thus, effective management of working capital, as indicated by Daniel *et al.* (2020:55), includes the planning and control of current assets and current liabilities in a process that will clear the risk of not being able to meet the short-term liabilities and prevent investing excessively in these assets.

Having chosen to conduct this study is based on some evidence that Nigeria has the largest potential market in Africa. As such, the financial sector, the oil and gas sector, and the consumer goods sector play critical and dominant roles in the country's economy. Furthermore, there is a gap in understanding how firm-specific characteristics and macroeconomic variables affect the financial performance and working capital management of a company, while at the same time, they are affecting the global economy. Concerning this study, three sectors were selected among the companies listed on the Nigerian Exchange Group as of December 31, 2022: The financial sector, the oil and gas sector, and the consumer goods sector. The selection of the financial sector, oil and gas sector, and the consumer goods sector is based on their significant contributions

to the country's economy. The financial sector in Nigeria had a consistent increase in its contribution to the GDP, growing from 2.76% in 2015 (National Bureau of Statistics [NBS] 2015) to 3.66% in 2021 (NBS 2021). The rise of this sector highlights its growing significance in the Nigerian economy, necessitating a thorough examination of how companies within it handle financial difficulties and oversee working capital (Olaniyi *et al.* 2023).

In the same vein, the oil and gas sector, albeit experiencing some variations, continues to be a prominent participant in Nigeria's economic environment (Ideh & Nwani 2023). Although the sector's GDP contribution declined from 8.68% in 2017 (NBS 2017) to 5.87% in 2020 (NBS 2020), it subsequently recovered to reach 7.24% in 2021 (NBS 2021). The sector's susceptibility to global oil price fluctuations and the resulting influence on financial performance make it an intriguing topic for investigation. Gaining insights into the resilience of businesses in the oil and gas sector may be achieved by studying how they manage their working capital in different macroeconomic situations.

The consumer goods sector, has consistently accounted for a significant portion of the GDP throughout the years, ranging from 9.09% in 2015 (NBS 2015) to 8.46% in 2021 (NBS 2021). The sector's capacity to withstand and adjust to shifting customer tastes and economic situations makes it a compelling subject for examination. Examining how companies in the consumer goods sector synchronise their financial plans with market needs and macroeconomic changes can enhance our comprehension of working capital management methods in a more sophisticated manner.

By contrast, other industries such as Real Estate, Transportation and Storage, and Construction, although noteworthy in their own domains, have distinct patterns in terms of GDP (Charles & Benson Ochieng, 2023). Specifically, the Real Estate industry's proportionate contribution to the GDP declined from 8.26% in 2015 (NBS 2015) to 6.23% in 2021 (NBS 2021). Comprehending the discrepancies in the performances of various sectors and their unique reactions to economic variables is essential for a full assessment of the chosen sectors. The selected sectors not only include a wide range of businesses but also serve as crucial foundations of the Nigerian economy, making them relevant topics for the study.

The remaining part of this chapter covers the background to the study, the problem statement, the research questions, research objectives, research hypotheses and gaps, the scope of the study, the research methodology, and the contribution made by the study.

1.2 Background to the study

The financial resources of a company used in carrying out its daily operations are referred to as working capital. Assessing a company's financial performance and working capital management are the most critical aspects with which this study is concerned. It is commonly presumed that working capital is the amount of money that a company uses to run its daily affairs of the company. This is the difference between assets in cash or easily translated into cash and the company's obligations, for which cash will be needed soon. Working capital management is an important aspect of financial management; it is the lifeblood and controlling nerve centre for any type of company because no business can run smoothly without proper control over it (Joshua *et al.* 2021:2). The management of current assets and current liabilities is necessary for the daily operations of any company. It plays a vital role in the success and failure of the company as it deals with the parts of assets that are transformed from one form to another during the manufacturing cycle. Therefore, the role of working capital management is significant for every company, irrespective of its sector or nature.

Working capital is a critical component in any company's environment that needs full focus, proper preparation, and management, according to Oladimeji and Aladejebi (2020: 30). As resources are limited, a company's characteristics and macroeconomic variables must have a key role to play in achieving profitability and the company's overall performance. Working capital management is concerned with handling the different components of current assets and current liabilities in such a way that the optimal feature of working capital is accomplished in areas where it has been achieved. All of these are critical for fostering adequate profitability and thus achieving the company's goal of optimising shareholder wealth. The importance of working capital management to the realisation of companies' objectives is evident in the literature. Okoye *et al.* (2020:4408) opined that efficient working capital management is crucial for companies because most

of their assets and liabilities are in the form of short-term receivables and payables. The authors claimed that during the thriving economic period, the successful management of working capital was important for companies so that they could continue to maintain their competitive position, while others stressed improving the management of working capital. There is a growing interest in the management of short-term assets and liabilities that are utilised by companies to finance their day-to-day operations. (Mabandla & Makoni, 2019:1).

Companies need to pay close attention to their short-term financial management, which is critical to the success of the company. However, companies that fail to pay due attention to working capital management cannot support themselves for longer periods (Basyith *et al.* 2021:237). Previous research has established numerous firm-specific features under the influence of an entity (internal forces) on working capital management, such as debt-to-equity, company size, company age, return on assets, and sales growth. It also identified a few macroeconomic variables that are outside the control of the company (external forces), such as gross domestic product, inflation, and the interest rate. It is therefore critical that optimum utilisation of working capital is achieved through the management of internal and external factors as a whole. In order to address the challenges posed by the financial crisis, financial performance and working capital management are regarded as the nerve centres for every company operation, as they offer inherent power to meet the company's everyday needs. To settle its obligations, working capital management plays an important role that the company must consider in maintaining a minimum level of working capital (Olaoye *et al.* 2019:44).

Therefore, current assets and current liabilities are essential components of working capital and should be carefully assessed as working capital management plays a key role in the company's profitability, risk, and value (Aldubhani *et al.* 2022:71). The lack of liquid funds for working capital have resulted in the failure of many companies and stunted their growth in some instances (Ikpefan *et al.* 2021). Top management's effectiveness depends on their ability to provide sound management of working capital (Oladimeji & Aladejebi, 2020:31). Effective working capital management can thus contribute to the

success of the company, whereas unsuccessful working capital management can lead to insolvency and in the end, bankruptcy (Mabandla & Makoni, 2019). Effective management of working capital presents a crucial and challenging financing decision that companies must make in their day-to-day management of operations. It involves taking strategic decisions in managing the connection between the current liabilities and current assets of a company to ensure smooth and efficient operations. It can simply be explained as the act of managing investments in current assets, as well as the increase or decrease in current liabilities. Working capital management is said to be efficient if a company can finance daily operational expenses and meet other short-term obligations at lesser costs (Okphiabhele *et al.* 2022:74). Ibrahim *et al.* (2021:4) opined that effective management of both current liabilities and current assets combined with fixed assets is required to meet the company's daily operational activities. Both current assets and current liabilities are the main elements of working capital.

Performance is the result of the fulfilment of the tasks assigned by a company. Company performance encompasses three specific areas: Financial performance (profits, return on assets, return on equity, and return on investment); product market performance (sales and market share); and shareholder return (total shareholder return and economic value added) (Egbunike & Okerekeoti, 2018:148).

A set of definitions provided by Nshimiyimana (2021:332) to illustrate the concept of performance are stated below. These are:

- Performance is a set of financial and non-financial indicators that offer information on the degree of achievement of objectives and results.
- Performance is dynamic, requiring judgement and using a causal model that describes how current actions may affect future results.

It is possible to consider two kinds of performance: financial performance and non-financial performance. For this study, financial performance was considered.

According to Mutende *et al.* (2017:2), financial performance refers to a company's ability to achieve planned financial results as measured against its intended outputs. Financial performance is usually measured using financial ratios such as return on equity, return on asset, return on capital employed, return on sales, and operating margin (Egbunike & Okerekeoti, 2018:148). Ratios provide a broader understanding of a company's performance since they are calculated from information obtained from its financial statements. A well-designed and implemented financial management system is expected to contribute positively to the creation of a company's value (Zheng *et al.* 2022:440). The subject of financial performance has received significant attention from scholars in the various areas of business and strategic management.

It has also been the primary concern of business practitioners in all types of companies since financial performance has implications for the company's health and survival. High performance reflects management's effectiveness and efficiency in making use of a company's resources, which in turn, contributes to the country's economy at large (Aribaba *et al.* 2022:200). A company's financial performance depends largely on the effectiveness of strategies adopted in managing its profit because of their importance to the sustenance of its daily operations.

This study only emphasis on tangible financial factors reasons been that, tangible factors, such as revenue and profit margins, are often more tangible and measurable, offering a foundation for objective examination. The accessibility and dependability of concrete financial data, often recorded in financial statements, make it a pragmatic option for constant comparison across various organisations and sectors. Furthermore, the straightforwardness of a model that relies on concrete variables improves its comprehensibility and usefulness in real-world applications. Although intangible variables like as human capital and managerial effectiveness are recognised as factors that influence financial success, their subjective character and potential complexity may provide challenges when including them into the model. The model focuses on tangible financial factors, which makes it compatible with widely used data in financial analysis.

This ensures that it remains relevant and easy to use in real-world financial decision-making processes.

The goal of financial performance and working capital management is to ensure that a company can continue its operations by having sufficient cash flow to satisfy both maturing short-term obligations and upcoming operational expenses (Hossain, 2020:114). Therefore, it is vital for a company to develop efficient company performance and working capital management because this will secure the company's financial position and help management build its business. Firm-specific characteristics and external factors such as economic conditions should be considered when managers make decisions about improving their financial performance and also about financing working capital.

This study observed and analysed firm-specific characteristics and macroeconomic variables on the financial performance and working capital management of listed companies in Nigeria, and addressed the following variables: firm size, leverage, operating cycle, sales growth, inflation rate, exchange rate, and gross domestic product. To address the topic "impact of firm-specific characteristics and macroeconomic variables on financial performance and on working capital management of listed companies in Nigeria", the study focused on three (3) sectors in Nigeria: The financial sector, the oil and gas sector, and the consumer goods sector. This will be discussed later in the study.

1.2.1 Firm-specific characteristics

Firm-specific characteristics are economic and operational factors, which in turn, represent part of the firm's internal environment. These include firm size, leverage, sales growth, and the operating cycle, among others.

In the next paragraphs, a description is provided of the firm-specific characteristics that are addressed in the study.

A significant predictor often found in research literature is *firm size*. Firm size measures the asset level of the company that is used to generate future economic benefits in terms

of profitability. Large companies often have the economic scale to generate substantial profit margins. Sharma *et al.* (2020:5), have observed that it is undeniable that the company cannot survive and continue their daily operations without sufficient levels of working capital and that the size of the company interacts significantly with the working capital management.

A company's *debt-to-equity* ratio, known as the *leverage ratio*. According to Cledy and Amin (2020), cited by Susellawati *et al.* (2022:1366), leverage can be understood as an estimator of the risks inherent in a company. It is used to borrowed capital which is intended to increase the owner's wealth. The leverage ratio is a measure of how much the company is financed with debt. It can be used to measure two things the proportion of debt in the capital structure and the company's ability to pay debts (Susellawati *et al.* 2022:1366).

The *operating cycle* is defined as the average time intervening between the acquisition of material or services entering the process and the final cash realisation (American Institute of Certified Public Accountants, 2019). The operating cycle is a progressive or in-progress form of finished goods to conversion of finished goods and finally to sales and collection of sales. According to Groth (2018), the operating cycle is of special importance if it is managed properly, and extremely ruinous if it is managed ineffectively. Operating cycle also refers to the number of days it takes a company to convert its inventory to cash; that is, the number of days it takes the company to produce from raw materials, to sell what is produced, and to collect monies due from the purchase (Aldubhani *et al.* 2022:72).

Sales growth refers to an increase in sales over a specific period. It is the annual percentage growth in sales that is consistent with the company's financial policies (Fauzan *et al.* 2019:175), the amount a company derives from sales compared to a previous corresponding period in which the latter sales exceeded the former. Several studies, such as Ngollo and Mwenda (2022:330) and Hajisaaid (2020:639) measured sales growth as the current year's sales minus the prior year's sales and divided by the prior year's sales. Nwude *et al.* (2018:112) argued that higher sales usually follow a higher

level of inventory. A higher level of sales means reduced inventories; reduced inventories lead to shorter management of working capital, which eventually improves profitability (Mabandla & Makoni, 2019:1). As a result, companies with high sales growth experience complications in getting access to different types of finance other than company finance, which in turn, contributes to smaller working capital. As observed by Mielcarz *et al.* (2018:955), the connection between sales growth and working capital management can suffer if working capital management influences sales growth. Sales growth can be stimulated by liberal credit and inventory policies, and it might also prompt the company to invest in more working capital (Agegneu, 2019:52).

1.2.2 Macroeconomic variables

Macroeconomic variables are economic and operational factors that, in turn, represent part of the company's external environment. These include the exchange rate, inflation rate, and gross domestic product, among others.

In the next paragraphs, a description of the macroeconomic variables that are addressed in the study is provided.

Inflation according to Ehiogu and Duruechi (2021:85), is a persistent and appreciable rise in the general level of prices. Inflation rates change the average price level based on a price index. The most well-known index is the consumer price index. The index measures the average retail price that consumers pay (Egbunike & Okerekeoti, 2018:146). A high or increasing consumer price index indicates the existence of inflation. Higher prices tend to reduce overall consumer spending; on the other hand, inflation itself is not negative; it leads to a decline in gross domestic product, and rapid inflation rates signal the risk of poor macroeconomic health (Ezu *et al.* 2020:54). Inflation is the rise in the overall price level of goods and services in the economy, i.e., the fall in the purchasing power of money.

According to Tajdini *et al.* (2021:1243), "*exchange rate*" is the price at which the currency of a country can be exchanged for another country's currency. Ezu *et al.* (2020:54) described the exchange rate as the value of two currencies relative to each other. It is the

price of one currency expressed in terms of another currency. It is the price at which the currency of one country can be converted to the currency of another. Exchange rates are either fixed or floating. Fixed exchange rates are decided by the central banks of a country, whereas floating exchange rates are decided by the mechanisms of market demand and supply (The Economic Times 2017). Factors that influence the exchange rate include interest rates, inflation rates, trade balance, political stability, internal harmony, the general state of the economy, and the quality of governance (Egbunike & Okerekeoti, 2018:147). Martin and Mauer (2003) cited by Wahab *et al.* (2022:1005) showed that understanding the impact of the foreign exchange rate is a critical element for purposes of firm valuation and risk management.

According to Ouamba (2022:1747), *gross domestic product* is the market value of goods and services produced in a country within a specified period, which is most often one year. It is a gauge of economic recession and recovery. It is also the most important source of economic growth, which implies that no country can be an indispensable nation. According to Asaolu and Ogunmuyiwa (2011), cited by Gikombo and Mbugua (2018:84) gross domestic product is the total income generated by various factors of production over a period in a certain locality. Some of the factors that generate revenue include debt, foreign exchange rates, and government fees.

Companies face several important decisions in their current operations, and one of these important decisions concerns the efficient management of liquidity (Atseye *et al.* 2015:2). This decision is critical, as it is the reason why many companies go bankrupt. They argued further that analysis of working capital management is critical, as this practice encompasses a few policies relative to the management of liquidity. Working capital management provides the company with information on the liquidity needed to operate efficiently. Appropriate evaluation of the working capital and identification of its basic elements can help managers decide over the companies' operations more efficiently and effectively and enable them to manage the working capital effectively in a way that balances liquidity and profitability. Liquidity is used to measure a company's ability to meet its current maturing liabilities (Egbunike & Okerekeoti, 2018:148). A company can

use liquid assets to finance its activities and investments when external finance is not available (Egbunike and Okerekeoti, 2018:148).

While research has extensively explored this subject in diverse sectors such as manufacturing, banking, construction, and conglomerates, none has done a comparative analysis among the sectors (See Egbunike & Okerekeoti, 2018, Jibril et al. 2023, Wosti & Pradhan 2023, Aribaba et al. 2022, Jimoh & Attah 2022, Ehiedu & Imoagwu 2022, Girma 2022, Dahmash et al. 2021, Cheong & Hoang 2021, Suseno 2020, Tjandra et al. 2022, Gooneratne & Jayasinghe 2022, Al Sharif 2023, Luitel 2023, Ogunlade et al. 2023, Farooq et al. 2023, Ally 2022, Majeed 2022, Sucipto et al. 2022, Moussa 2019).

An extensive and thorough comparative examination across several sectors has the capacity to provide a deep and full grasp of the issue being discussed. Through careful examination of the similarities and differences in approaches, technology, and methods across various sectors, academics and industry practitioners may discover significant insights. This comprehensive investigation will not only uncover unique details within each sector but also shed light on the most effective strategies that can be used across other industries, creating a knowledge foundation that goes beyond individual sectors. These insights are crucial for improving adaptation, promoting innovation, and guiding decision-making processes that can effectively tackle difficulties on a larger scope. The ultimate value is in the convergence of information from other industries, enabling the development of better-informed, robust, and adaptive strategies in a constantly changing corporate environment. This gap in the research calls for a comparative analysis to find out which of the sectors selected for this study is most impacted by firm-specific characteristics and macroeconomic variables when it comes to the financial performance and management of working capital of listed companies in Nigeria. To summarise, this study investigated the impact of firm-specific characteristics and macroeconomic variables on financial performance and working capital management of listed companies in Nigeria for the period 2013–2022 and identified which sector is impacted the most. The study selected three sectors, which are the financial sector, the oil and gas sector, and the consumer goods sector in Nigeria.

1.3 Statement of the problem

Working capital management is a major aspect of financial management (Kayani *et al.* 2019:353, Uguru *et al.* 2018:9). Le *et al.* (2018:15) ascertained that a company's financial management must evaluate the trade-off between profitability and risk before deciding on the level of investment in current assets. The problem of working capital management of a company is that it often fails to manage its current assets and liabilities and the interrelationship that lies between them. Therefore, an approach to managing the flow of working capital efficiently in a company has an important role in the company's financial performance (Wang, 2020:2).

Effective management of working capital can increase the value for the shareholders as taking care of the liquidity can increase the company's profitability (Kisanyanya, 2020:50). Although profitability may be considered the governing factor for the company, nevertheless, the management of working capital can effectively bring to a halt, or its ultimate downfall, what might otherwise be a successful and profitable company (Owolabi & Alayemi, 2009:2).

The current squeeze on cash and credit is most often threatening the survival of many companies all over the world and Nigeria in particular and is considered a source of the company's current assets and current liabilities. The aftermath of this credit crunch is a drastic reduction in production and sales, leading to massive retrenchments of workers and the liquidation of many companies. Unfortunately, not every company can find external financing easily. Where it is available, the cost of borrowing may be expensive, resulting in a poorer bottom line. Working capital management has become one of the most important issues in the company, and many executives strive to identify the basic working capital drivers and the appropriate level of working capital (Owolabi & Alayemi, 2009:2). Because companies that believe in lessening their level of cash by holding too many inventories or granting too much credit imperil their working capital management.

Working capital is critical to all small businesses because they do not have access to long-term financing, yet, they must finance their current assets (Hussain *et al.* 2021:2).

The relationship between current assets and current liabilities is such that the current assets should be twice the current liabilities, but this proportion varies in practice and is most often due to the lack of efficiency of the company's working capital management (Sari & Sedana, 2020:117). The lack of knowledge in the past about the impact of firm-specific characteristics and macroeconomic on financial performance and working capital management of listed companies and the lack of literature on this topic could explain these stated shortcomings among financial managers. Besides, most companies do not take the issue of financial performance and working capital management seriously, which poses a threat to those companies. This shortcoming has had negative effects on their profits and components. Therefore, the policies on financial performance and working capital management in a company are not working effectively to enhance profitability.

The survival and growth of companies depend on the interaction of macroeconomic factors and a firm's characteristics. Al-Homaidi *et al.* (2018:1) found evidence that gross domestic product, interest rate, exchange rate and inflation rate negatively and significantly impact the financial performance of companies. Ghareli and Mohammadi (2016:1785) report mixed findings for the effect of firm-specific characteristics on financial performance. Studies have also substantiated the effect of firm-specific characteristics on financial performance (Dioha *et al.* 2018; Ehiedu & Imoagwu, 2022; Abdulrazaq & John, 2022). For instance, firm-specific characteristics such as firm age, firm size, liquidity, and leverage have all been associated with profitability.

Companies take several operational and strategic decisions, including investment decisions and operating decisions. However, macroeconomic unpredictability is significantly higher in underdeveloped countries. For example, unpredictability in the Nigerian economy has shown the rate of inflation and interest rates, among others, to be beyond the control of a company. Studies that systematically analyse the impacts of firm-specific characteristics and macroeconomic factors are (Egbunike & Okerekeoti, 2018; Korent & Orsag, 2018; Suseno, 2020; Dioha *et al.* 2018; Ajao & Ogieriakhi, 2018; Olayiwola, 2022; Ferdaous & Barua, 2020; Bobenic *et al.* 2020; Abubakar *et al.* 2018; Ruhomaun *et al.* 2019; Gikombo & Mbugua, 2018; Kalam & Utsho, 2020; Hussain *et al.*

2021; Kartiningsih & Daryanto, 2020; Okoye *et al.* 2020; Girma, 2022; Sucipto *et al.* 2022). Significant firm-specific characteristics and macroeconomic indicators have been demonstrated over time in Nigeria. Companies' survival and growth, however, also rely on the interaction of macroeconomic variables and firms' characteristics, which are industry-related unique functions.

In the context of Nigeria, a key issue for companies is related to some economic matters, which are gross domestic product, inflation, interest rates, and unemployment (Huawei, 2022). However, overdependence on petroleum resources has been the cause of market disruptions in the oil market. These disruptions are often the result of heavy pressure on the country's external accounts, which brings about an increase in the inflation rate (Sayne & Hruby, 2016). Additionally, the current pitfalls in working capital management are companies' definition of raw material requirements, which the Central Bank of Nigeria ceased to allocate to forex companies to acquire raw materials (Nnorom, 2015; Adebimpe & Ekubiat, 2015:23).

Manufacturing companies invest heavily in the various capital components, and it will be interesting to study how the variables determine the financial performance and working capital management of listed companies in Nigeria. When a company fails to manage its liquidity, it will have cash shortages and, more importantly, experience problems paying its obligations when they fall due. Therefore, the inability to meet the current obligations as they fall due may threaten the survival of the companies in that operation, which cannot be efficiently and effectively funded. Hence, what constitutes financial performance and working capital management are very important to the survival of the company. For optimality to be achieved, the financial performance and management of working capital must be given keen attention in practice.

1.4 Research objectives

This segment highlights the objectives of this study. The objectives are subdivided into four parts, starting with firm-specific characteristics and financial performance, followed by firm-specific characteristics, and working capital management, macroeconomic

variables and financial performance, and lastly macroeconomic variables and working capital management.

1.4.1 Firm-specific characteristics and financial performance

- The study investigates the impact of firm-specific characteristics on the financial performance of listed consumer goods sector, financial sector and oil and gas sector in Nigeria.
- The study compared the three sectors, looking at which sector is impacted the most by firm-specific characteristics on financial performance in Nigeria.

1.4.2 Firm-specific characteristics and working capital management

- The study investigates the impact of firm-specific characteristics on the working capital management of listed consumer goods sector, financial sector and oil and gas sector in Nigeria.
- The study compared the three sectors, looking at which sector is impacted the most by firm-specific characteristics on working capital management in Nigeria.

1.4.3 Macroeconomic variables and financial performance

- The study examines to what extent macroeconomic variables impact the financial performance of listed consumer goods sector, financial sector and oil and gas sector in Nigeria.
- The study observed the three sectors, looking at which sector is impacted the most by macroeconomic variables on financial performance in Nigeria.

1.4.4 Macroeconomic variables and working capital management

- The study examines to what extent macroeconomic variables impact the working capital management of listed consumer goods sector, financial sector and oil and gas sector in Nigeria.

- The study observed the three sectors, looking at which sector is impacted the most by macroeconomic variables on working capital management in Nigeria.

1.5 Research questions

This study investigates the impact of firm-specific characteristics and macroeconomic variables on the financial performance and working capital management of listed consumer goods sector, financial sector and oil and gas sector in Nigeria. The study specifically answers the following questions:

1.5.1 Firm-specific characteristics

- 1a. Does firm size have a significant impact on the financial performance of listed consumer goods sector, financial sector and oil and gas sector in Nigeria?
- 1b. Does firm size have a significant impact on the working capital management of listed consumer goods sector, financial sector and oil and gas sector in Nigeria?
- 2a. Does leverage have a significant impact on the financial performance of listed consumer goods sector, financial sector and oil and gas sector in Nigeria?
- 2b. Does leverage have a significant impact on the working capital management of listed consumer goods sector, financial sector and oil and gas sector in Nigeria?
- 3a. Does the operating cycle have a significant impact on the financial performance of listed consumer goods sector, financial sector and oil and gas sector in Nigeria?
- 3b. Does the operating cycle have a significant impact on the working capital management of listed consumer goods sector, financial sector and oil and gas sector in Nigeria?
- 4a. Does sales growth have a significant impact on the financial performance of listed consumer goods sector, financial sector and oil and gas sector in Nigeria?
- 4b. Does sales growth have a significant impact on the working capital management of listed consumer goods sector, financial sector and oil and gas sector in Nigeria?

1.5.2 Macroeconomic variables

- 1a. What impact does the inflation rate have on the financial performance of listed consumer goods sector, financial sector and oil and gas sector in Nigeria?

- 1b. What impact does the inflation rate have on the working capital management of listed consumer goods sector, financial sector and oil and gas sector in Nigeria?
- 2a. What impact does gross domestic product have on the financial performance of listed consumer goods sector, financial sector and oil and gas sector in Nigeria?
- 2b. What impact does gross domestic product have on the working capital management of listed consumer goods sector, financial sector and oil and gas sector in Nigeria?
- 3a. What impact does the exchange rate have on the financial performance of listed consumer goods sector, financial sector and oil and gas sector in Nigeria?
- 3b. What impact does the exchange rate have on the working capital management of listed consumer goods sector, financial sector and oil and gas sector in Nigeria?

Based on the research questions, the following hypotheses have been formulated.

1.6 Research hypotheses

The following hypotheses are formulated in null form:

1.6.1 Firm-specific characteristics

Hypothesis 1

H01a: Firm size has a significant impact on the financial performance of listed consumer goods sector in Nigeria.

H01b: Firm size has a significant impact on the financial performance of listed financial sector in Nigeria.

H01c: Firm size has a significant impact on the financial performance of listed oil and gas sector in Nigeria.

H02a: Firm size has a significant impact on the working capital management of listed consumer goods sector in Nigeria.

H02b: Firm size has a significant impact on the working capital management of listed financial sector in Nigeria.

H02c: Firm size has a significant impact on the working capital management of listed oil and gas sector in Nigeria.

Hypothesis 2

H01a: Leverage has a significant impact on the financial performance of listed consumer goods sector in Nigeria.

H01b: Leverage has a significant impact on the financial performance of listed financial sector in Nigeria.

H01c: Leverage has a significant impact on the financial performance of listed oil and gas sector in Nigeria.

H02a: Leverage has a significant impact on the working capital management of listed consumer goods sector in Nigeria.

H02b: Leverage has a significant impact on the working capital management of listed financial sector in Nigeria.

H02c: Leverage has a significant impact on the working capital management of listed oil and gas sector in Nigeria.

Hypothesis 3

H01a: The operating cycle has a significant impact on the financial performance of listed consumer goods sector in Nigeria.

H01b: The operating cycle has a significant impact on the financial performance of listed financial sector in Nigeria.

H01c: The operating cycle has a significant impact on the financial performance of listed oil and gas sector in Nigeria.

H02a: The operating cycle has a significant impact on the working capital management of listed consumer goods sector in Nigeria.

H02b: The operating cycle has a significant impact on the working capital management of listed financial sector in Nigeria.

H02c: The operating cycle has a significant impact on the working capital management of listed oil and gas sector in Nigeria.

Hypothesis 4

H01a: Sales growth has a significant impact on the financial performance of listed consumer goods sector in Nigeria.

H01b: Sales growth has a significant impact on the financial performance of listed financial sector in Nigeria.

H01c: Sales growth has a significant impact on the financial performance of listed oil and gas sector in Nigeria.

H02a: Sales growth has a significant impact on the working capital management of listed consumer goods sector in Nigeria.

H02b: Sales growth has a significant impact on the working capital management of listed financial sector in Nigeria.

H02c: Sales growth has a significant impact on the working capital management of listed oil and gas sector in Nigeria.

1.6.2 Macroeconomic variables

Hypothesis 5

H01a: The inflation rate has a significant impact on the financial performance of listed consumer goods sector in Nigeria.

H01b: The inflation rate has a significant impact on the financial performance of listed financial sector in Nigeria.

H01c: The inflation rate has a significant impact on the financial performance of listed oil and gas sector in Nigeria.

H02a: The inflation rate has a significant impact on the working capital management of listed consumer goods sector in Nigeria.

H02b: The inflation rate has a significant impact on the working capital management of listed financial sector in Nigeria.

H02c: The inflation rate has a significant impact on the working capital management of listed oil and gas sector in Nigeria.

Hypothesis 6

H01a: GDP has a significant impact on the financial performance of listed consumer goods sector in Nigeria.

H01b: GDP has a significant impact on the financial performance of listed financial sector in Nigeria.

H01c: GDP has a significant impact on the financial performance of listed oil and gas sector in Nigeria.

H02a: GDP has a significant impact on the working capital management of listed consumer goods sector in Nigeria.

H02b: GDP has a significant impact on the working capital management of listed financial sector in Nigeria.

H02c: GDP has a significant impact on the working capital management of listed oil and gas sector in Nigeria.

Hypothesis 7

H01a: The exchange rate has a significant impact on the financial performance of listed consumer goods sector in Nigeria.

H01b: The exchange rate has a significant impact on the financial performance of listed financial sector in Nigeria.

H01c: The exchange rate has a significant impact on the financial performance of listed oil and gas sector in Nigeria.

H02a: The exchange rate has a significant impact on the working capital management of listed consumer goods sector in Nigeria.

H02b: The exchange rate has a significant impact on the working capital management of listed financial sector in Nigeria.

H02c: The exchange rate has a significant impact on the working capital management of listed oil and gas sector in Nigeria.

1.7 Research gap

Few studies (Korent & Orsag, 2018:47; Egbunike & Okerekeoti, 2018:142; Ajayi *et al.* 2017:1) have examined the impact of firm-specific characteristics (internal factors) and macroeconomic variables (external factors) on the financial performance of listed companies. However, few studies have considered the interrelationship between internal and external factors in working capital management of listed companies (Zariyawatt *et al.* 2016:365); Mutaju, 2015:108; Mias & Retno, 2016:276; Oseifuah, 2016:35). These studies focus only on one sector, which are mostly the consumer goods (manufacturing) sector or the banking sector (See Egbunike & Okerekeoti, 2018, Jibril *et al.* 2023, Wosti & Pradhan 2023, Aribaba *et al.* 2022, Jimoh & Attah 2022, Korent & Orsag, 2018, Ehiedu & Imoagwu 2022, Girma 2022, Zariyawatt *et al.* 2016, Mutaju, 2015, Mias & Retno, 2016, Dahmash *et al.* 2021, Cheong & Hoang 2021, Suseno 2020, Tjandra *et al.* 2022, Ajayi *et al.* 2017). Thus there is little understanding on the impact of firm-specific characteristics and macroeconomic variables on financial performance and working capital management in other sectors, especially the financial sector. So it can be deduced that previous studies are limited in scope. This has led to a significant dearth of knowledge in literature. To this end, this study fills this knowledge gap by expanding on the scope of previous studies in the literature by examining the effect of firm-specific characteristics and macroeconomic variables on financial performance and working capital management in three sectors – consumer goods sector, financial sector and the oil and gas sector.

Furthermore, a comparative study is essential in order to know which sector is mostly impacted by firm-specific characteristics and macroeconomic variables on financial performance and working capital management. Firstly, it aids in identifying the sectors that are most impacted by firm-specific features and macroeconomic influences. Gaining a comprehensive understanding of the varying significance of these factors across various sectors offers significant insights for scholars, investors, and professionals. Having this information enables stakeholders to customise their strategies and decision-making processes according to the unique dynamics of each sector. Furthermore, the analysis assists in revealing industry-specific patterns and trends. Researchers may analyse the responses of different sectors to both firm-specific and macroeconomic

factors to identify distinct traits that impact financial performance and working capital management in each sector. This sophisticated comprehension surpasses broad observations and facilitates more precise and knowledgeable decision-making. Finally, the comparison research offers useful direction on the allocation of resources or investments. Having knowledge of the sectors that exhibit more sensitivity to certain aspects enables investors to make well-informed choices, taking into account their risk tolerance, investment objectives, and market expectations. Practitioners, such as financial managers and executives, may use this information to improve their financial strategy, optimise their working capital, and boost their overall performance.

Despite the aforementioned significance of carrying out a comparative study, no study in the literature has carried a comparative study among sectors in the study of this kind (See Egbunike & Okerekeoti, 2018, Jibril et al. 2023, Wosti & Pradhan 2023, Aribaba et al. 2022, Jimoh & Attah 2022, Ehiedu & Imoagwu 2022, Girma 2022, Dahmash et al. 2021, Cheong & Hoang 2021, Suseno 2020, Tjandra et al. 2022, Gooneratne & Jayasinghe 2022, Al Sharif 2023, Luitel 2023, Ogunlade et al. 2023, Farooq et al. 2023, Ally 2022, Majeed 2022, Sucipto et al. 2022, Moussa 2019) . This has led to a significant gap in the literature. This study therefore fill this knowledge gap by carrying out a comparative study on three sectors (consumer goods, financial service, and oil and gas) as the effect of firm-specific characteristics and macroeconomic variables on financial performance and working capital management.

Thus, this study contributes to the body of knowledge by investigating the impact of firm-specific characteristics and macroeconomic variables on financial performance and working capital management, using four variables for internal factors (firm-specific characteristics) and three variables for external factors (macroeconomic variables). The study considered three sectors, which are the financial sector, the oil and gas sector, and the consumer goods sector, using all the companies under these three sectors listed on the Nigerian Exchange Group. The study compare these three sectors to understand which sector firm-specific characteristics and macroeconomic variables impact the most on financial performance and working capital management in Nigeria.

The findings of this study contribute to the existing literature and theoretical perspective on the impact of firm-specific characteristics and macroeconomic variables on financial performance and working capital management of listed consumer goods sector, financial sector and oil and gas sector in Nigeria. Understanding the interplay between firm-specific characteristics and macroeconomic variables in influencing financial performance and working capital management has significant managerial implications. Managers and executives could use these insights in order to make well-informed choices pertaining to the allocation of resources, management of risk, and development of operational plans. Through the analysis of the determinants of financial performance and the management of working capital, companies may effectively allocate resources, adjust to dynamic economic conditions, and improve their overall competitive advantage. This knowledge can be particularly beneficial for investors and stakeholders, as it empowers them to evaluate the robustness and flexibility of listed companies under diverse economic conditions, thereby aiding in investment decisions and risk assessment.

1.8 Scope of the study

This study is limited to the impact of firm-specific characteristics and macroeconomic variables on financial performance and working capital management of listed companies in Nigeria from the 2013 to 2022 accounting periods. The firm-specific characteristics and macroeconomic variables used as exogenous variables in the study include firm size, leverage, operating cycle, sales growth, liquidity, interest rate, inflation rate, gross domestic product, exchange rate, and unemployment rate, while the endogenous variables used in the study are financial performance and working capital management. The study focuses on the companies listed on the Nigerian Exchange Group, especially the financial sector, the oil and gas sector, and the consumer goods sector in Nigeria. The choice of these sectors is based on their uniqueness in the industry and their significant contribution to the economy of the country.

1.9 Research methodology

According to Kassu (2019:1), research methodology is the path through which researchers need to conduct their research. It shows the path through which these

researchers formulate their problem and objective, and present their results from the data obtained during the study period (Mgboji *et al.* 2022:2). Hence, this path briefly explains the research design, research philosophy, and research approach adopted for the study, which will be explained in detail in Chapter five of this study. This study used an ex-post facto research design, positivist research philosophy, and a quantitative research approach. The reason for these choices is that the study tested hypotheses and examined the relationships among and between the variables.

The next section briefly explains the study's population, sampling method and size, the method of data collection, and techniques used for data collection and analysis. This will be dealt with in detail in Chapter five of this study.

1.9.1 Study population sample size and sampling techniques

The population of this study is all listed companies on the Nigerian Exchange Group (NGX), formally the Nigerian Stock Exchange (NSE), as of December 31, 2022.

The target population of the study is all companies listed under the financial sector which were 50, the oil and gas sector which were 10, and the consumer goods sector which were 21 as of December 31, 2022, (see Appendix C page 329). The target population is indicated in Table 1.1 below:

Table 1.1: Target population

Names of sectors	Number of companies
Financial sector	50
Oil and gas sector	10
Consumer goods sector	21

Source: Authors computation (2023)

The Nigerian economy is heavily dependent on three key sectors: oil and gas, financial, and consumer goods. These sectors play vital roles in the overall functioning of the economy. The oil and gas sector plays a crucial role in generating substantial revenue for

Nigeria, constituting a significant proportion of the country's export earnings. The phenomenon under consideration offers employment prospects, entices foreign direct investment, and stimulates economic expansion. The financial sector, encompassing various entities such as banks, insurance companies, and capital markets, plays a crucial role in supporting economic endeavors through the provision of essential financial services and the promotion of investment. The aforementioned factors contribute to the encouragement of savings, the formation of capital, and the facilitation of credit accessibility, thereby bolstering entrepreneurial activities and fostering business growth. The consumer goods sector assumes a crucial role in satisfying the needs and demands of the Nigerian populace. The concept encompasses a diverse array of industries, including but not limited to food and beverages, clothing, electronics, and household products. These sectors play a significant role in stimulating domestic consumption and generating employment opportunities across the entire value chain. The aforementioned sectors collectively contribute to the economic development of Nigeria, facilitate job creation, and enhance the overall standards of living for its populace.

The study used secondary data, which made it convenient to obtain data from the audited financial statements of all the companies listed under the financial sector, the oil and gas sector, and the consumer goods sector on the Nigerian Exchange Group for the internal factors (firm-specific characteristics), which are available on the NGX website (www.ngxgroup.com), and the National Bureau of Statistics (NBS) Nigeria for the external factors (macroeconomic variables), which are also available on the NBS website (www.nigerianstat.gov.ng).

The study used simple random sampling to select the sample size. The sample size for the study is 41 companies for financial sector, eight companies for oil and gas sector and 17 companies for consumer goods sector (see Appendix D page 331), because only those companies were able to provide their complete audited financial statements for the period under review. The sample size is grouped based on the three sectors as indicated in Table 1.2 below:

Table 1.2: Sample companies

Names of sectors	Number of companies
Financial sector	41
Oil and gas sector	8
Consumer goods sector	17

Source: Authors computation (2023)

1.9.2 Method of data collection and analysis

There are basically two sources of data collection, namely primary and secondary sources. This study used secondary sources for data collection. The data was derived from the 2013–2022 published audited annual reports and accounts of the selected financial companies, the oil and gas companies, and the consumer goods companies for firm-specific characteristics and the National Bureau of Statistics for macroeconomic variables. The statistical technique that was used for the study was panel data, for which multiple regression analysis was used to measure the collected data. The study used STATA14 as the statistical software for the data analysis, because STATA14 has a range of advanced tools for analysis that a researcher needs to organise and manage the data and then analyse the statistical results.

1.10 Significance of the study

This study provides insights on the many stakeholders and regulatory bodies involved, such as government agencies, stockbrokers, and financial analysts, who might potentially benefit from the outcomes of this research. Below is the significance of the study:

1.10.1 Management and staff of the sector

The study should help management and staff of the companies under review understand the factors influencing financial performance and working capital management by gaining an insight into how their companies can effectively manage their capital fluctuations.

1.10.2 Regulatory body's policymakers and financial analysts

Regulatory bodies may use the findings of this study to improve the framework for the regulation of companies in Nigeria. The results of this study can also assist policymakers

and financial analysts in implementing a new set of policies and regulations regarding financial performance and working capital management. The analysis in this study can assist financial analysts, stockbrokers, and other parties gain important knowledge on investment analysis and portfolio construction.

1.10.3 Researchers and scholars

The study contributes to the existing knowledge and provides background information to research companies, individual researchers, and scholars who would like to carry out further research in this area. The study can also assist researchers and academics expand their research on the impact of firm-specific characteristics and macroeconomic variables on financial performance and on the working capital management of listed companies in Nigeria.

1.10.4 Remaining sectors

The study can be of immense help to the remaining sectors because the solution to the study can be used to check the remaining sectors. Also, no comparative studies on the topic have been done, comparing different sectors to see which sector firm-specific characteristics and macroeconomic variables on financial performance and on working capital management of listed companies in Nigeria impact the most, which this research work would consider.

1.11 Chapter summary

This chapter gives an insight into the general overview of the research topic and also explains how the remaining chapters will be classified. It further discussed the background to the study, which gave a broad explanation of the research topic, "The impact of firm-specific characteristics and macroeconomic variables on financial performance and on working capital management of listed companies in Nigeria". The variables, both dependent and independent, were also briefly discussed. The statement of the problem was highlighted. The research question, research objectives, research hypotheses, research gap, scope of the study, and finally the contribution of the study were all discussed. Table 1.3 below highlight the chapter layout for the rest of the study.

Table 1.3: Chapters layout

Chapters	Activities
Chapter 2	Literature review of working capital management, financial performance and theoretical framework
Chapter 3	Literature review of firm-specific characteristics
Chapter 4	Literature review of macroeconomic variables
Chapter 5	Research methodology
Chapter 6	Data presentation, analysis and discussion of results
Chapter 7	Summary, conclusions and recommendations

The next chapter discuss the literature review on working capital management and financial performance, which are the dependent variables for this study.

CHAPTER 2: LITERATURE REVIEW OF WORKING CAPITAL MANAGEMENT FINANCIAL PERFORMANCE AND THEORETICAL FRAMEWORK

2.1 Introduction

This chapter reviews the literature on the dependent variables chosen for this study, which are working capital management and the financial performance of listed companies. The chapter is organised to cover the conceptualisation of the key terms, therefore, the concepts of working capital, working capital management, and financial performance are addressed.

2.2 Conceptualisation of key terms

In this section, conceptual issues relating to working capital, such as the different types of working capital, the balance sheet view, operating cycle view, current assets, and current liabilities, are addressed. The different techniques for analysing working capital ratios, current ratios, and sources of working capital both long-term and short-term sources are discussed. The dangers of excess or insufficient working capital, factors influencing working capital, the nature and size of businesses, as well as the manufacturing cycle, price level changes, credit policy, and operating efficiency, are part of the discussion. The concept of working capital management, the approaches and policies of working capital management, and the importance of understanding the concept of working capital management are discussed, and finally, the concept of financial performance and the theoretical framework used to underpin this study are also discussed.

2.3 Concept of working capital

In this segment, the term or concept of working capital is defined by different authors and addressed in the study. The types of working capital, current assets and current liabilities, techniques for analysis of working capital, sources of working capital, dangers of excess or insufficient working capital, and factors influencing working capital are all deliberated on in this section.

Working capital is part of the company's capital that is required for managing the financing requirements for both expenses (such as payables and payments to creditors) and short-term (current) assets, such as cash, marketable securities, debtors, and inventories (Abdulkadir & Usman, 2023). Indicatively, the investment in current assets revolves fast and is sooner liquefiable into cash, which can then possibly be used or invested in other current assets. In other words, working capital is also the short-term capital reservation for immediate use (Senthilnathan, 2020:2).

The lifeblood of all companies' concerns is working capital (Umenzekwe *et al.* 2021:141). Unless companies have proper working capital, they cannot make progress. Inadequate working capital creates input shortages, while overspending leads to additional costs. Management must ensure that money spent in their company as working capital earns at least as much return as they would have received if it had been invested elsewhere (Hussain *et al.* 2021). Working capital meets the short-term financial requirements of a company. Therefore, working capital is the investment required for running the company's daily activities. It is the result of the time lag between the expenditure for the purchase of raw materials and the cash collection from the sales of finished products or services rendered. The working capital requirements determine the liquidity and profitability of a company. This task goes a long way towards affecting the financing and investing decisions of companies (Yeboah & Yeboah, 2014:296). Working capital refers to those assets that may rapidly be converted into cash and used to acquire labour, materials, power, and other items needed before the fixed assets can operate, and to finance the company's sales activities (Eya, 2016:2).

According to Korede (2017:24), the term working capital is commonly used for the capital required for day-to-day operations in a company or going concern, such as for purchasing raw materials or meeting day-to-day expenditure on salaries, wages, rents, rates, and advertising. Operational working capital components include inventories, accounts payable, such as money to pay suppliers, and accounts receivable, such as payments received from business partners after sales (Talonpoika *et al.* 2016:277).

The management of working capital is a key financial management function. The financial manager needs to establish the level and optimum mix of current assets and current liabilities in working capital funds. The financial manager also needs to ensure that adequate sources of funding are utilised to finance working capital and that the company's short-term obligations are fulfilled adequately and on time. According to Too *et al.* (2016:707), working capital refers to the funds that are available and used for the day-to-day operations of a company. It consists broadly of that portion of the assets of a company that are used in or related to its current operations. Further, it refers to funds that are used during an accounting period to generate a current income that is consistent with the major purpose of a company's existence. Working capital constitutes the segment of a company's assets that is actively deployed in ongoing business operations and immediate transactions (Bhattacharyay, 2023). It covers claims, stocks or raw materials, shops, manufactured goods and completed commodities, goods, receivables, and cash. These kinds of assets are usually transient. The accounting notion of working capital differs from the inflow to the outflow of funds, such as sources and utilisation of money (net cash inflow). According to Ilham *et al.* (2022), working capital is, in other words, the excess of existing current assets over current liabilities. Working capital, which comprises current assets and current liabilities, is indispensable in the overall corporate strategy for creating shareholder value. It is crucial in investment decisions to avoid tied-up funds in working capital and circumvent shortages of working capital for the smooth running of companies' operations (Ajayi *et al.* 2017:2).

The working capital notion originated with Marx in 1867. Marx used the term "variable capital", meaning they were working on it, to analyse how working capital came to be (Agyemang *et al.* 2019:2). The concept has evolved, and there has been disagreement concerning working capital, which is the difference between current assets and current liabilities. Current assets are stock, cash receivables, and overdrafts in cash and banks, while current liabilities are account payables and short-term loans or debts that must be paid within one year (Tjandra *et al.* 2022:112).

Working capital is defined as closed-down materials, work-in-progress, finished goods, receivables, and corresponding currency and money, according to (Haitham & Maryam, 2005, cited by Korede, 2017:25). Therefore, fixed capital is invested in current assets, which in a short period of time can be transformed into cash, and the cash is returned to assets again. Based on Okoye *et al.* (2020:4409), working capital is an integral part of a company's performance, hence the importance often attached to its management. According to Chasha *et al.* (2022:3), effective working capital management ensures the maintenance of optimal levels of working capital at any point in time. An optimal level of working capital is one that supports daily operations without compromising efficiency. It does not expose the company to losses associated with excess or inadequate working capital. Adequacy of working capital enhances the operational performance of a company, thereby ensuring its continued existence, while inadequacy works in reverse (Tjandra *et al.* 2022:110). Working capital measures a company's efficiency and represents the liquid assets that are available to it. It also indicates the company's short-term financial health and its capacity to meet day-to-day operating expenses (Lan-Le *et al.* 2018:15). According to Godswill *et al.* (2018), working capital is optimally managed to manage current assets and current liabilities, such that an acceptable level of net working capital can be achieved. Thus, net working capital is the mathematical difference between the current assets and current liabilities of a company. If a company cannot maintain a satisfactory level of net working capital, it would be insolvent, and if not corrected, it would be commensurate with bankruptcy (Godswill *et al.* 2018:50).

Working capital is classified into gross working capital and net working capital. Gross working capital relates to the amount of funds invested in current assets used in the business process, while net working capital means excess current assets above current liabilities (Chaurasiya, 2023:811). In addition, assets and liabilities of less than one year, that is, current assets and current liabilities, must be managed carefully. Current assets cover raw material inventories, finished goods, account or trade receivables, short-term investment, and cash, whereas current liabilities cover trade or account payables, overdrafts, and short-term loans (Oladimeji & Aladejebi, 2020:27).

According to Chuan-guo Li *et al.* (2014), “gross working capital” (total current assets) refers to a company's investment in current assets. Current assets are the assets that can be converted into cash in a fiscal year or operating cycle. While net working capital is the difference between current assets and current liabilities. Current liabilities are the claims of outsiders that are expected to mature in payment within a year. According to Le (2019), net working capital may be positive or negative. Positive net working capital will arise when current assets exceed current liabilities, while negative net working capital will arise when current liabilities exceed current assets, which means there is no capital investment, but there is a capital deficit. Therefore, it contains the two concepts of gross working capital and net working capital, both of which are exclusive to the proper management of working capital (Joseph *et al.* 2016:49).

For the purpose of this study, the definition of working capital by Godswill *et al.* (2018:51) was used, which says, “Working capital can be defined as the professional conscious practice of maintaining an excess of current assets over current liabilities to maintain a good current ratio, which is a basic measure for a company’s overall liquidity.”

2.3.1 Types of working capital

According to Rosyadah *et al.* (2022:206), working capital frequently changes its form and is sometimes also referred to as circulating capital. It can transit from cash to inventories and/or receivables and then back to cash. Working capital is the capital or funds required for the day-to-day operations of the company. Based on Njoroge and Opuodho (2022:5), working capital is usually invested in all types of inventories, such as raw materials, finished goods, credit extensions to debtors, and cash in hand. Working capital is divided into various types, based on the balance sheet view and the operating cycle view (Ismail, 2017:12).

The balance sheet view divides working capital into gross working capital and net working capital, while the operating cycle view divides working capital into permanent working capital, which is further divided into regular and reserve working capital, and temporary

working capital, which is also further divided into seasonal and special working capital (Elnur, 2014:4; Ismail, 2017:12).

2.3.1.1 Balance sheet view

In this section, the study discussed the gross working capital and the net working capital which are types of working capital categorised under the balance sheet view.

- **Gross working capital**

Gross working capital, refers to the quality and quantum of a company's current assets or a company's investment in non-fixed assets that are required to operate the company over its normal operating cycle. The gross working capital is all the short-term assets held by the company (Basyith *et al.* 2021:237). According to Akgün and Memis Karatas (2020), gross working capital is the company's investment in current assets, which is also known as the total of current assets. Current assets are the assets that can be converted into cash within an accounting year or operating cycle, and they include cash, short-term securities, debtors, bills receivable, and stock or inventory. It is necessary to concentrate on the fact that the investment in current assets should be neither excessive nor inadequate (Elnur, 2014:3). This gross working capital, is useful to finance managers, whose main objective is to evaluate the magnitude and extent of current asset utilisation and the amount of financial resources required to support the company's level of current assets (Etiennot *et al.* 2012:162). The gross working capital appeals to the finance manager, whose concerns are the sources and uses of funds. Each item on current assets must be financed, and it is the responsibility of the finance manager to finance these current assets in line with the company's capital structure (Basyith *et al.* 2021:237). According to Ismail (2017:12), gross working capital is all the current assets on the balance sheet of a company. The grey area in the management of current assets or gross working capital is their unpredictability; as, it is very difficult to ascertain the exact time of conversion of such assets. This is because the liabilities occur at their own pace and do not wait for the current asset to be realised.

- Net working capital

According to Pham *et al.* (2020:741), net working capital refers to the difference between current assets and current liabilities. Current liabilities are those claims of outsiders that are expected to mature for payment within an accounting year. This includes creditors or accounts payable, bills payable, bank overdrafts, and outstanding expenses. Net working capital can be positive or negative. A positive net working capital is when current assets exceed current liabilities, while a negative net working capital is when current liabilities exceed current assets (Ilham *et al.* 2022).

According to Ahmad *et al.* (2022), the qualitative concept of net working capital is referred to as net liquid assets," which is current assets minus current liabilities. This concept appeals to accountants as it is in line with their mathematical accuracy in tallying the two sides of the balance sheet. The concept is useful, and it is appropriate when assessing the liquidity position of a company and providing an indication of the sources of working capital finance (Akgün & Memis Karatas, 2020). Net liquid assets represent the component of the company's current assets that is funded by long-term capital. In cases where the company has no current liabilities, it implies that all current assets are financed by long-term funds (Almomani *et al.* 2021). An argument in favour of net working capital is that it gives true information on the liquidity of a company, which indicates whether the company has sufficient liquid resources to pay its obligations as and when they mature. It determines whether the company will be able to survive a depression or meet its contingent needs. It also enables comparisons of the financial positions of two companies when their current assets are equal. Groups such as creditors, most especially trade creditors, find this concept useful because their main concern could be knowledge about the margin of safety available to them should there be any delays in the liquidation of current assets (Mabandla & Makoni, 2019).

According to Zheng *et al.* (2022), net working capital is a very frequently used term. There are two ways to understand net working capital. First, it is simply the difference between current assets and current liabilities on the balance sheet of a company. The other understanding discloses a little deeper or hidden meaning of the term: Net working capital

is that part of current assets that is indirectly financed by long-term assets. Compared to gross working capital, net working capital is considered more relevant for effective working capital financing and management (Syafitri *et al.* 2021:377).

2.3.1.2 Operating cycle view

In this segment, the study discussed the permanent or fixed working capital and the temporary or variable working capital, which are also types of working capital. The permanent or fixed working capital is further sub-divided into reserve working capital and regular working capital, while the temporary or variable working capital is sub-divided into seasonal working capital and special working capital. These are all discussed in this segment.

- **Permanent or fixed working capital**

Permanent or fixed working capital refers to the minimum amount of capital required to implement the baseline company activity levels. In other words, it continually represents the current assets required all year. The working capital also has a limited duration and does not generally exceed one year, although some investments are in fact constant. Amponsah-Kwatiah and Asiamah (2021) sees permanent working capital as the minimum level of current assets that is continuously required by the company to carry on its business operations. It is permanent in the same way that the company's fixed assets are. Depending on the changes in production and sales, the need for working capital over and above the permanent working capital will fluctuate. Permanent working capital is a mandatory requirement for any company to function well within one accounting period (Herdinata, 2017:31). According Zimon and Tarighi (2021:3), permanent working capital is the minimum amount of working capital that must always remain invested. It is typically a combination of cash, stock, and account receivables that is always locked in. It is sometimes also referred to as fixed working capital or hardcore working capital. It implies that the base investment amounts to all types of current resources, which are always respected to carry on business activities. The value of current assets could increase or decrease over time. Mandipa and Sibindi (2022:4), defines fixed or permanent working capital as the minimum quantity of liquid assets continuously needed to maintain business

operations. Permanent working capital could be subdivided into reserves and regular working capital. This is explained below.

- Reserve working capital

Reserve working capital is also known as cushion working capital (Gill *et al.* 2022). This is the short-term financial arrangement made by the business units to meet uncertain changes or uncertainties. A company is always working with the expectation of some risks, which may be controllable or uncontrollable (Ismail, 2017:13). The reserve working capital can be used to meet uncontrollable risks and sustain the business. It is the working capital available over and above the regular working capital. It is kept for contingencies that may arise because of unexpected situations. Herdinata (2017:31) calls reserve working capital "primary working capital", which is the minimum amount of working capital required to ensure business sustainability.

- Regular working capital

According to Herdinata (2017:31), regular working capital is also known as "normal working capital". It is the amount of working capital required to run production activities at normal capacity. There is no strict definition of 'normal capacity', as it depends on the company's specific conditions. The minimum amount of working capital to be maintained in a normal condition is called "regular working capital", according to Ismail (2017:13). It is the permanent working capital that is normally required in the normal course of business for the working capital cycle to flow smoothly.

- Temporary or variable working capital

According to Mandipa and Sibindi (2022:5), temporary or variable working capital is defined as the difference between total working capital and fixed working capital that represents the resources required to support increased production and sales, largely because of short-run or seasonal changes in the level of business activity. Based on Osei *et al.* (2023:3), temporary or variable working capital is the working capital that keeps on changing with the changes in production and sales activities. It is the extra working capital over the permanent working capital that is needed to support the changing production

and sales activities. Herdinata (2017:31) defines variable or temporary working capital as the amount of working capital that is required in a specific situation and has a changeable amount based on the situational change in one period. Temporary or variable working capital fluctuates frequently, which can be ascribed to various factors and requirements of the company (Mohammad, 2022:67). These funds are drawn from short-term sources. There is a close relationship between temporary working capital and the level of production and sales. There is no uniformity in production and sales throughout the year. If a heavy order is received for production and there are a lot of credit sales, there is a need for more temporary working capital. At the same time, if production is carried on in anticipation of demand, temporary working capital is required (Mandipa & Sibindi, 2022). In a nutshell, temporary working capital is extra working capital required to support changing production and sales activities. In simple terms, it is the difference between net working capital and permanent working capital (Ismail, 2017:13). Temporary working capital could be subdivided into seasonal and special working capital. This is explained below.

- **Seasonal working capital**

Seasonal working capital refers to the changing amount of working capital as a result of changes in season (Akbar *et al.* 2020). Seasonal working capital means an amount of working capital maintained to meet the seasonal demand for a product. Seasonal working capital is a temporary increase in working capital that is linked to some relevant seasonal activity or demand for the business (Rey-Ares *et al.* 2021:4). It is applicable to businesses experiencing the impact of seasons, for example, the manufacturer of thick sweaters or boots, for whom the relevant season is winter. Normally, their working capital requirement would increase in that season because of higher sales in that period and then go down as the collection from debtors is greater than the sales (Zimon & Tarighi, 2021).

- **Special working capital**

According to Anton and Afloarei Nucu (2021), special working capital is an amount of working capital maintained to meet the expenses of special programmes of the company. It is the rise in temporary working capital that occurs because of a special event that

otherwise does not take place (AL-Zararee *et al.* 2022:231). Special working capital has no basis to forecast and is usually a rare occurrence.

Therefore, this study used the balance sheet view, in which net working capital was considered the type of working capital. The reason for choosing net working capital is because it is considered more relevant for effective working capital financing and management.

2.3.2 Current assets

Current assets are assets that consist of cash and items that normally will be converted into cash within one year (Bulenga, 2019:13). They are usually listed in order of liquidity. Current assets indicate the value of all assets that, under the usual course of business, are projected to become cash in a reasonable amount within one year. Current assets include inventories, accounts receivables, marketable securities, cash, prepayments, and other cash-ready liquid assets. According to Ajayi *et al.* (2017:3), the term current assets is used to designate cash and other assets or resources commonly identified as those that are reasonably expected to be realised in cash, sold, or consumed during the normal operating cycle of a company. Having too many current assets increases the company's liquidity. However, this can also be costly, since it increases the cost of inventory storage and obsolete stock, which can further reduce a company's profitability (Zariyawati *et al.* 2016:366).

Cash is, of course, the ultimate measure of a current asset since current liabilities are paid off in cash. Cash equivalent represents a temporary investment of more cash than current requirements made for the purpose of earning, and one must be alert to the valuation of such investments (Nworie *et al.* 2023:77). The mere ability to convert an asset to cash is not the sole determination of its current nature; it is the intention and normal practice that govern the asset. Thus, the cost of sale should be included in the current asset commitment from a buyer to purchase the asset at a given price within the following operating cycle (Yenni *et al.* 2021).

According to Herison *et al.* (2022:385), current assets are items that can be turned into cash quickly. Examples of current assets are cash on hand, short-term investments, inventory, and accounts receivable. Accounts receivable must be collected in a timely manner. The sooner one receives the money owed, the sooner it can be reinvested to earn a profit. Effective inventory management is also essential. The goal is to have enough inventories to complete orders but not holding an excess. Excess inventory creates additional costs, such as paying for storage space and inventory spoilage. Based on Saoud (2019:16), current assets represent the value of all assets that are reasonably expected to be converted into cash within one year in the normal course of business. Based on Major *et al.* (2022:41), current assets include inventory, accounts receivable, marketable securities, cash, prepaid expenses, and other liquid assets that can be readily converted to cash. In personal finance, current assets are all assets that a person can readily convert to cash to pay accrued debts and cover liabilities without having to sell fixed assets (Omah *et al.* 2022:115). In other words, current assets are anything of value that is highly liquid.

2.3.3 Current liabilities

Current liabilities are debts that must be paid within one year (Bulenga, 2019:13). They are usually listed in order of priority of payment. Management must ensure that funds are available to pay current liabilities when they become due to maintain the company's good credit reputation. Ismail (2017:18) defines current liabilities as a company that incurs liabilities during the operating period to meet its operations budget. Examples of current liabilities are inventory purchases, employee wages, taxes, and accounts payable. Unearned revenue is also considered a current liability, meaning one has been paid for goods or services, but has not yet delivered them. Generally, current liabilities are expected to be paid within a one-year period (Wasan *et al.* 2022). However, when liquidity is too low, this may also cause companies to have difficulty fulfilling obligations related to current liabilities, such as payments to creditors and short-term debt. If this happens continuously, companies will experience financial difficulties and may cease operations (Zariyawati *et al.* 2016:366).

2.3.4 Techniques for analysis of working capital

According to Panigrahi *et al.* (2022:2), proper management of working capital requires a rigorous investigation of current assets, current liabilities, and tendencies, along with the components of current assets and liabilities, and those contained in working capital. There are several reasons why an analysis of the working capital of a company may be necessary. First, an analysis of the working capital can be based on an examination of the financial statements. Second, management has the capacity, where the analysis suggests that trends are needed and detected, to recognise and take corrective actions based on the analysis (Ilham *et al.* 2022). A third individual will look for changes over a period within the company, so that this knowledge may be applied in guidance setting. Four key methodologies are available to analyse a company's working capital condition. These four key methodologies are outlined below:

- Ratio analysis
- Fund flow analysis
- Cash flow analysis
- Trend analysis

However, for the purpose of this study, only the ratio analysis was considered. The reason for discussing only ratio analysis as part of techniques for analysing working capital is because the current ratio was chosen as a proxy for working capital management in this study, which is also part of ratio analysis.

2.3.4.1 Ratio analysis

Based on Sihombing *et al.* (2022:140), ratio analysis is a standard method for examining the financial performance of a company. Management can employ ratio analysis of working capital as a technique to verify the efficiency of operating capital. The pulse of the working capital can be measured by profit, and it could also aid in diagnosing the position of the company's operating capital. This is the most frequently applied technique, as it covers nearly every facet of the examination of working capital (Zheng *et al.* 2022). In this technique, certain ratios are calculated for every area of the ratio analysis, and, at

the same time, the conclusions are based on trends against those specified as guidelines. Different ratios are used to analyse the different facets of a company's working capital condition. Ratio analysis is not merely a technique to detect or point out the link between two figures, but it is also used to measure the basic strengths or weaknesses of a certain concern (Naim, 2022:11).

The most important ratios and their formulas for working capital management used in analysing the various aspects of the working capital position of an enterprise are outlined below:

- Current ratio (current assets divided by current liabilities)
- Quick ratio (current assets minus inventory divided by current liabilities)
- Turnover of working capital (net sales divided by net working capital)
- Current debt to tangible net worth (current liabilities divided by tangible net worth)

On this aspect, only the current ratio was discussed since it is the ratio used in this study.

2.3.4.2 Current ratio

According to Nabila *et al.* (2023:19), the current ratio is one of the measures of liquidity ratio that reflects a company's short-term ability of current assets to meet its current liabilities (including payables) in its financial period balance sheet. The current ratio is measured as a portion of the current asset amount divided by the current liability amount (Sari *et al.* 2022). Generally, the current ratio is expected to be 2:1, and a current ratio of less than 1 is an indicator that the company has insufficient current assets to meet its short-term current liabilities and obligations (Senthilnathan, 2020:5). The working capital ratio or current ratio, which is current assets/current liabilities, indicates whether a company has enough short-term assets to cover its short-term liabilities. Most managers believe that a ratio between 1.2 and 2.0 is sufficient (Ismail, 2017:12).

Current ratio = Current assets

Current liabilities

(Senthilnathan, 2020:5).

2.3.5 Sources of working capital

Working capital can be classified into two sources, the long-term source, and the short-term source (Altaf & Ahmad, 2019:466).

2.3.5.1 Long term source

Long-term source is the constant source of fixed working capital, which may be informed by external or internal sources (Seth *et al.* 2020). The revenue and depreciation retained are more evident among domestic sources. Revenue returns are not distributed and depend significantly on factors such as the tax rate and the policy on dividends. Based on Basyith *et al.* (2021), this source is usually utilised for development, but it can also be utilised as working capital, depending on the available amount. Depreciation is more likely to be used for relatively longer periods as a source of working capital. The share capital, debentures, and long-term credits of financial institutions are explicit among external sources. Also, the source of working capital could be considered as loans from financial institutions and commercial banks (Wijayanti & Mardiana, 2020). Such loans may take the form of unsecured or guaranteed credit. The units can take commercial banks' overdrafts and secured loans that are generally made upon the commitment of securities.

2.3.5.2 Short term source

This source might be informed by both internal and external sources. The tax provisions and dividend provisions could be referred to as internal sources (Aldubhani *et al.* 2022:71). Delayed tax payments may serve as a source of variable working capital. Taxes are not paid every day, but the accumulated liability is shown by the reserves. According to Internal short-term funds are generated in the form of exempt wages, wage shares by the company inventory to the benefit of the company, and tax liabilities (Bhattacheryay, 2021). According to Saputri *et al.* (2021:17), external short-term financing sources can be separated into open-account commercial loans and short-term loans. Commercial credit is available for a limited time and is then entirely liquidated at any point during the year. This does not apply to all industries, but rather to the seasonal industries.

2.3.6 Dangers of excess or insufficient working capital

According to Ketema (2018:8), insufficient or excessive working capital situations are described as unsafe because of the portion of the funds that is not fully utilised by companies. Insufficient working capital, especially a shortage of cash, can pose challenges to solvency if it fails to finance the company's short-term obligations. Gleibner *et al.* (2022) emphasised that the dangers of excess working capital to a company are an unnecessary holding of inventories, imperfect credit policy that follows an ineffective collection period, management ineffectiveness, and an affinity to make dividend policy freethinking. On the contrary, companies with insufficient working capital have been forced to inactive growth, loss of credit opportunity, loss of cash discount caused by inadequate working capital to pay early in the discounting period, and loss of goodwill (Mandipa & Sibindi, 2022). This is one of the severe challenges through which companies can lose their reputation, if they are unable to pay their creditors at maturity or provide goods or services to their potential customers on time, and organisational control by creditors because of failure to finance their obligations.

2.3.7 Factors influencing working capital

According to Ilham *et al.* (2022), many factors influence the working capital needs of companies. All factors are of different importance, and therefore, an analysis of the relevant factors should be made to determine the total investment in working capital. The following are factors that influence working capital accounting.

2.3.7.1 Nature and size of business

The nature and size of a business influence a company's working capital needs (Akbar *et al.* 2020:96). Trading and financial companies generally have low investments in fixed assets, but they require large investments in working capital. Under contract, public utilities have a limited need for working capital and must invest abundantly in fixed assets (Owolabi & Obida, 2012:14). The amount required also varies as per the nature of the enterprise, where an enterprise involved in production requires more working capital than a service sector enterprise (Lawal, 2017:32).

2.3.7.2 Manufacturing cycle

According to Bota and Moldovan (2022:43), the manufacturing cycle starts with the purchase of raw materials and is completed with the production of finished goods. If the manufacturing cycle involves a longer period, the need for working capital will be greater because an extended manufacturing time-span means a larger tie-up of funds in inventories. Habib and Kayani (2022) states that a business needs to estimate the requirement for working capital in advance for proper control and management. Any delay at any stage of the manufacturing process will result in the accumulation of work-in-process and will enhance the requirement for working capital (Njoroge & Opuodho, 2022).

2.3.7.3 Price level changes

Generally, rising price levels require a higher investment in working capital. With increasing prices, the same levels of current assets need enhanced investment, according to Alvarez *et al.* (2020). However, companies that can immediately revise the prices of their products upward may not face severe working capital problems in periods of rising levels. The effects of an increasing price level may, however, be felt differently by different companies due to variation in individual prices. It is possible that some companies may not be affected by the rising prices, whereas others may be seriously affected by them (Boisjoly *et al.* 2020).

2.3.7.4 Credit policy

According to Sawarni *et al.* (2022), the credit policy of the company affects the need for and role of working capital by influencing the level of debtors. The credit terms to be granted to customers may depend on the norms of the industry to which the firm belongs (Lawal, 2017:33). A long collection period will generally mean tying up larger funds in book debts. The working capital of a company, according to Osei *et al.* (2023), is also affected by credit terms granted by its creditors. A company enjoying liberal credit terms will need less working capital.

2.3.7.5 Operating efficiency

According to Mehzabin *et al.* (2022:26), operating efficiency means optimum utilisation of resources. The company can minimise its need for working capital by efficiently

controlling its operating costs (Rosyadah *et al.* 2022). With increased operating efficiency, the use of working capital is improved, and the pace of the cash cycle is accelerated. Better utilisation of resources improves profitability and helps relieve the pressure on working capital (Anton & Afloarei Nucu, 2020). Operating efficiency can be measured using the total asset-to-sales ratio. This measures the percentage of investment in assets that is needed to generate the annual sales level (Vaidya & Paudel, 2022:71).

In summary, working capital is the cash used to run the daily activities of a business. It has been classified into two types: the balance sheet view and the operating cycle view. The balance sheet view is further classified into gross working capital, which is the sum of current assets, and net working capital, which is the difference between current assets and current liabilities. The operating cycle view is also classified into permanent working capital and temporary working capital. Permanent working capital is the minimum amount of working capital that must be invested, while temporary working capital is the difference between net working capital and permanent working capital. Current assets, current liabilities, techniques for analysing working capital, ratio analysis, the current ratio, sources of working capital, and factors influencing working capital were all discussed in this segment.

This marks the conclusion of the discussion on the working capital concept. The following section discussed working capital management, components of working capital management, approaches to working capital management and importance of working capital management.

2.4 Concept of working capital management

In the next paragraphs below, the definition of working capital management is discussed by different authors.

According to Bhattacharyay (2023:19), the term working capital management implies the implementation of working capital policies with the control of day-to-day cash requirements, inventories, receivables, accrued expenses, and account receivables. To

have efficient working capital policies, it is important to know about the determination of the level of working capital and how the working capital can be financed (Senthilnathan, 2020:3). In application, companies attempt to manage two requirements, which are liquidity and profitability of business. The efficiency of working capital management depends on how a company manages its working capital requirements, while increasing its profitability (Senthilnathan, 2020:2).

According to Ismail (2017:15), working capital management refers to decisions made relating to working capital and short-term financing. These involve managing the relationship between a company's short-term assets and its short-term liabilities. This management of short-term assets is regarded as the important management of long-term financial assets, since it directly contributes to the maximisation of a company's profitability, liquidity, and total performance (Munyoro & Shaningwa, 2019:60). The goal of working capital management is to ensure that the company can continue its operations and that it has sufficient cash flow to satisfy both maturing short-term debt and upcoming operational expenses. Working capital management can be considered a substantial proportion of financial management. It is impossible for any company to run smoothly without applying the appropriate control. Managing current assets and current liabilities properly is necessary for any business organisation. It also plays a crucial role in the success or failure of companies, irrespective of their nature (Ali, 2018:6).

Working capital management plays a vital role in the day-to-day operations and survival of a company. Proactive management of operations is the key to a successful business. An efficient management of working capital addresses several areas of a business, such as payment and collection of cash, timely ordering of inventory, and even sales management. All these areas contribute towards better financial performance, which in turn, accelerates the growth of a company (Mohsin *et al.* 2019:28). Companies managing their working capital effectively will not need to pay back short-term obligations by borrowing from external resources. A basic fact is that having too little cash on hand makes companies' survival uncertain, whereas too much investment in short-term resources proves unprofitable. Although the efficient use of working capital components,

that is, short-term assets and short-term obligations, provides companies with an immediate advantage of increasing profitability, it also generates indirect venues of increasing returns by providing idle cash to invest (Mohsin *et al.* 2019:29).

Working capital management is defined according to Kehinde (2011), as cited by Korede (2017:30) as the management of investment in current assets and the financing of the current assets. It also involves setting working capital management policy and carrying out that policy in a company's daily operations to achieve its goals and objectives, such as shareholder wealth maximisation, competitive advantage, and growth. According to Kehinde (2011), if performance criteria such as liquidity, solvency or bankruptcy, efficiency, profitability, and economic added value are considered, it will be apparent that the company must hold and manage the different levels of working capital that are appropriate to its performance criteria as cited by (Korede, 2017:30).

Therefore, for the purpose of this study, working capital management is defined as the business strategy designed to ensure that a company operates efficiently by monitoring and using its current assets and current liabilities to the best effect.

2.5 Components of working capital management

The next paragraphs describe the components of working capital management that are addressed in the study.

The basic components of working capital management that should be managed efficiently, according to Korede (2017:32), include accounts receivable management, or debtors' collection period; accounts payable management, or creditors' payment period; inventory or stock management; operating cycle or liquidity management; and lastly, cash and cash equivalents, or cash management.

2.5.1 Accounts receivable management

The credit policy and collection procedure have a significant impact on the management of accounts receivable. A credit policy specifies the requirements to value the worth of

customers, and a collection procedure provides guidelines to collect unpaid invoices that will reduce delays for customers who have not yet made payment for goods or services and outstanding receivables (Richards & Laughlin, 1980; Hills & Sartoris, 1992, as cited by Duru, 2014:28). Accounts receivable that the company has provided, and the objective of debtor management are used to minimise the time lapse between completions of sales and receipts of payment. In this respect, accounts receivable is calculated as receivables divided by sales. This variable represents the rate at which the company collects payment from its customers (Falope & Ajilore, 2009:73; Samiloglu & Demirqunes, 2008:44; Sharma & Kumar, 2011:159).

According to Korede (2017:32), accounts receivable management is the average time taken by credit customers to settle their accounts. In working capital management, receivables are a very important component of current assets and debtors' collection periods, or receivables turnover in days, which is the average length of time required to convert the company's receivables into cash (Raheman *et al.* 2010, as cited by Korede, 2017:32). Accounts receivables arise, according to Lawal (2017:26), when a company sells products or services on credit and does not collect cash immediately. Companies grant trade credit for many reasons, such as giving incentives to customers, protecting sales from competitors and attracting potential customers, building and strengthening long-term relationships with dealers, and conforming to past or industrial practice. Receivables management involves decisions made relating to the investment in business debtors. In credit selling, it is certain that the company has to pay the cost of getting money from debtors and take some risk of loss due to bad debts. Receivables management begins with the decision of whether or not to grant credit. Where goods are sold on credit, a monitoring system is important, because without it, receivables will build up to excessive levels, liquidity will decline, and bad debts will offset the profit on sales (Lawal, 2017:26).

2.5.2 Accounts payable management

Accounts payable is one of the major sources of secured short-term financing (Gitman, 2009; Hill & Sartoris, 1992). Utilising the value of relationships with payees is a sound

objective that should be highlighted as being as important as having the optimal level of prevention (Hill & Satoris, 1992). Consequently, a strong alliance between the company and its suppliers will strategically improve production lines and strengthen its credit record for future expansion. Singh (2004), as cited by Duru (2014:30), opined that the liquidity of positionary companies mainly depends upon the accounts receivable collection and payable deferred policy, as well as the inventory conversion period of the company. Current liabilities, according to Korede (2017:34), include all obligations that mature within a year, such as creditors, bills payable, accrued expenses, short-term bank loans, income tax liabilities, and long-term debt, excluding bank overdrafts, all of which quickly mature in the current year.

According to Lawal (2017:30), accounts payable arise when a company buys products or services on credit but does not pay cash immediately. It constitutes a short-term source of finance along with accrued expenses and deferred income. Uyar (2009) opined that accounts payables or creditors turnover ratio is used to know how much credit time the company receives from its trade creditors. The creditors' turnover ratio shows the breathing time received by the company in terms of payment of credit purchases. Hence, effectiveness lies in whether the company is enjoying the actual credit period promised by suppliers. Accounts payable is calculated by dividing the number of purchases by creditors (Korede, 2017:34).

2.5.3 Inventory and stock management

Inventory management, stock management, or inventory turnover in days, also known as the inventory conversion period, is another important component of working capital management (Raheman, 2011). It is the average time required, according to Aminu and Zainudin (2015:11), to convert materials into finished goods and then to sell those goods. This variable helps in evaluating the efficiency of the company's inventory management policy. If the company takes more time selling inventory, which means inventories are only slowly converted into sales, it will decrease the profitability of the company. Inventory management, or turnover in days, is calculated using inventory divided by the cost of sales multiplied by 365 days (Korede, 2017:34). Inventory management covers the range

of management techniques that are used in controlling the level of stock holding, so that profitability and competitiveness can be maximised. Inventories exist principally in the form of raw materials, work-in-progress, and finished goods. The level of inventory a company will hold usually depends on the nature of its business (Lawal, 2017:25).

According to Duru (2014:33), stock constitutes a substantial proportion of the current asset group. It represents investments made for the purpose of obtaining a return. The return is derived from the expected profits that may result from the sale. In most companies, a certain level of inventory must be kept generating an adequate level of sales. If the stock level is inadequate, the sales volume will fall below the level otherwise attainable. Excessive stocks, on the other hand, expose the company to expenses such as storage costs, insurance, and taxes, as well as the risk of loss of value through obsolescence and physical deterioration (Yankah *et al.* 2022). Moreover, excessive stocks tie up funds that could be used more profitably elsewhere.

2.5.4 Operating cycle and liquidity management

Operating cycle management, according to Korede (2017:35), is categorised into days of operating cycle and days of working capital. The day-to-day operating cycle measures the efficiency with which the company manages its inventory and receivables. Also, it is said that it is the sum of the raw material cycle, work-in-progress cycle, finished goods cycle, and receivables conversion period, according to (Vineet & Sukhdev, 2013, as cited by Korede, 2017:35). The lower the number of days in the operating cycle, the better it is, and it depicts that the company is minimising its investment in working capital and accelerating its working capital ratio. Day's working capital, on the other hand, according to Vineet and Sukhdev (2013), as cited by Korede (2017:35), refers to the days' operating cycle less trade creditors, which is the accounts payable period in days. It measures the liquidity risk of the company. It further states that days' working capital is a measure of the cash conversion cycle that provides insights into the underlying health of a company. It is a key metric because it measures the average number of days tied up in net working capital in the operating cycle. If a day's working capital is trending upwards over time, then it will have a negative financial impact on the company's overall profit.

Liquidity management is necessary for all companies, small or large, because it means collecting cash from customers, so that there is no difficulty in paying short-term debts. Therefore, when a company does not manage its liquidity well, it will have cash shortages, which will result in difficulty paying obligations (Duru, 2014:31).

2.5.5 Cash management

In the words of Korede (2017:34), there are three reasons why companies choose to hold cash. These reasons are transactional motives, precautionary motives, and speculative motives. Looking into the transactional motive, companies need a cash reserve to balance their short-term cash inflows as well as their long-term cash outflows, the reasons being that they are not perfectly matched. It is also the approximate size of the cash reserve, which can be estimated by forecasting cash inflows and outflows by preparing cash budgets. The precautionary motive, on the other hand, states that forecasts of future cash flows are subject to uncertainty and that it is possible that a company will experience unexpected demands for cash. For this reason, it gives a precautionary motive for holding cash. It could be in the form of easily realised short-term investments reserved for precautionary reasons.

Finally, under speculative motives, companies may decide to build up cash reserves to take advantage of any attractive investment opportunities that may arise, especially in the takeover market. If a company has significant speculative cash reserves for which it cannot see an advantageous use, it may choose to enhance shareholder value by returning them to shareholders through a share repurchase scheme or a special cash dividend. The functions of cash management include managing cash received and paid out by the company; managing cash circulating within the company; managing cash balances held by the company; investing surplus cash; and finding ways to finance cash deficits (Shin & Soenen, 1998; as cited by Lawal, 2017:27). Cash management, which is part of treasury management, is concerned with optimising the amount of cash available, maximising the interest earned by spare funds not required immediately, and reducing losses caused by delays in the transmission of funds (Uyar, 2009; Lawal, 2017:28).

In summary, accounts receivable management is the average time taken by credit customers to settle their accounts, which is when a company sells its products or services on credit and does not collect cash immediately. Accounts payable management arises when a company buys a product or service on credit, but does not pay cash immediately. Inventory or stock management is the allocated time required to convert raw materials into finished products and then sell those products. Liquidity management is the collection of cash from the company's customers to avoid difficulty in paying short-term debts, while operating cycle management is categorised into days' operating cycle and days' working capital. Days' operating cycle measures the efficiency with which the company manages its inventory and receivables. Days' working capital is the days' operating cycle less trade creditors. Finally, cash management is the management of cash received and paid out, cash circulating, and cash balances held by the company.

2.6 Approaches to working capital management

The next paragraphs describe the approaches to working capital management as addressed in the study.

According to Senthilnathan (2020:3), there are basically three different approaches to working capital management. These are the:

Aggressive approach, moderate/matching approach and the conservative approach.

2.6.1 Aggressive approach

An aggressive approach to working capital management, according to Senthilnathan (2020:3), is a policy according to which a company will maintain its working capital at a minimum level, even below the working capital management requirement. This can be a result of possible non-collection from debtors and delayed payment to creditors. An aggressive working capital management policy of liquidity management results in a lower cash conversion cycle by reducing the inventory period and the accounts receivable period, while stretching the accounts payable period. Aggressive working capital management leads to capital being minimised in current assets and long-term

investments. This would result in higher profitability but greater liquidity risks (Ketema, 2018:14). According to Korede (2017:37), an aggressive approach or policy will increase profitability, since less cash will be tied up in current assets, but it will also increase risk, since the possibility of cash shortages or running out of inventory increases. Godswill *et al.* (2018) opine that profitability is the focus of an aggressive approach to working capital management. In their words, an aggressive approach or strategy is characterised by high risk and high profitability. Aggressive strategies involve long-term funds, which are utilised only to finance fixed assets and part of permanent working capital, while short-term funds are utilised to finance temporary working capital, which saves interest costs at the cost of high risk.

2.6.2 Moderate or matching approach

In the words of Senthilnathan (2020:4), most companies apply this approach since working capital is managed as per the requirements. Looking at the revenue of the company, the excess current assets will be converted into profitable assets, and those assets can be liquidated if there is a working capital requirement. This approach has moderate risk for the company. In this approach, credit limits for customers and creditors are pre-set to manage the working capital requirement. The companies will act to meet the deadlines to receive payments from debtors and to pay creditors. In this policy, a company must maintain its current assets to match its current liabilities with a low amount of cash in hand. This approach enables the company to act defensively to meet the working capital requirement as necessary. The level of working capital will be moderate, neither too high nor too low, but just right (Afande, 2015, as cited by Ketema, 2018:14). A moderate approach or policy, according to Korede (2017:37), would tread a middle path between the aggressive and conservative approaches. There are no absolute benchmarks for what may be regarded as aggressive or otherwise, but these characterisations are useful for analysing the ways in which individual companies approach the operational problem of working capital management. This strategy or approach, according to Godswill *et al.* (2018:51), can also be termed the hedging strategy". It involves an equal level of risk for the same level of profitability. In the

approach, each asset would be financed by a debt instrument of almost the same maturity.

2.6.3 Conservative approach

This approach refers to the lowest risk of managing working capital. This policy cannot ensure the optimum use of funds in assets. This policy facilitates a company's ability to generate targeted revenue after analysing possible uncertain events, especially fluctuations in sales. At the same time, it helps a company have a smooth operating cycle (Senthilnathan, 2020:4).

According to Ketema (2018:14), the company may prefer to hold rather heavy cash and bank balances in current accounts or invest in readily marketable securities, while holding higher stocks of raw materials and finished goods in preparation for reducing the risks of out-of-stock and loss sales. In addition, a more conservative working capital management policy places a larger amount of capital invested in liquid assets, but at the sacrifice of some profitability. Such a policy or approach will give rise to a lower risk of financial or inventory problems, but at the expense of reducing profitability (Korede, 2017:37). A conservative strategy or approach refers to an approach or strategy that involves low risk and low profitability. In most cases, it is termed a risk-free approach or working capital financing. Working capital here is financed by long-term sources of funds, such as term loans and equities, according to Godswill *et al.* (2018:51).

In summary, the aggressive approach results in a lower cash conversion cycle by reducing the inventory period and the accounts receivable period, while stretching the accounts payable period. The moderate or matching approach is the middle path between the aggressive and conservative approaches, while the conservative approach refers to the low risk and low profitability of managing the working capital.

2.7 Importance of working capital management

Empirical and theoretical evidence points to the fact that working capital management is crucial to the survival of any company. Padachi (2006:45) emphasised that the

management of working capital is important to the financial health of companies of all sizes. This importance is hinged on many factors. First, the amounts invested in working capital are often high in proportion to the total assets employed, so it is vital that these amounts are used in an efficient way. Second, the management of working capital directly affects the liquidity and profitability of the company and, consequently, its net worth (Smith, 1980:50). Every company has to make arrangements for adequate funds to meet its daily expenditures, aside from investments in fixed assets. The internal resources of a company are often insufficient to meet all its needs. Also, it is not always possible for the owners, promoters, or entrepreneurs to mobilise finance from their personal resources. Resources therefore have to be financed through borrowing, keeping in mind the short-, medium-, and long-term requirements of the trade or industry for funds.

Working capital management is critical for all companies, but mostly for smaller ones. A company may not have much investment in fixed assets, but it must invest in current assets. There is a direct relationship between a company's growth and its working capital needs. As sales grow, the company needs to invest more in inventories and debtors; continuous growth in sales may also require additional investment in fixed assets (Padachi, 2006:45). Working capital management is an integral part of overall financial management. It includes several aspects that make it an important topic for study. Sunhil (1991), as cited by Atseye *et al.* (2015:6), in his study of working capital management, suggested that every company should maintain a sound working capital position. It should have adequate working capital to run its company operations. Both excessive and inadequate working capital positions are dangerous from a company's point of view. The former means idle funds that earn no profits for the company, while the latter not only impairs the company's profitability, but also results in production interruptions and inefficiencies. Aravindan and Ramanathan (2013), cited by Qian (2016:10), opines that working capital management refers to actions aimed at managing companies' working capital levels and does not refer to a specific management model or framework. In contrast to long-term financial decisions, working capital management deals with the issues of short-term financing. These short-term financing decisions are important for the sustainability of the companies because they affect liquidity and profitability. Also, working

capital is important for a company with long-term financing because the indication of short-term survival strength and financial health through short-term liquidity will impact the company's ability to gain attractive long-term financing (Qian, 2016:10).

This concludes the discourse on the concept of working capital management, the components of working capital management, the various approaches to working capital management and the importance of working capital management. The subsequent section examined the concept of financial performance and the theories adopted for the study.

2.8 Concept of financial performance

In the next paragraphs, the concepts of financial performance and its proxies are discussed as addressed in the study.

Financial performance, for the purpose of this study, is synonymous with organisational performance, company performance, or corporate performance or profitability. It has been identified in the literature that the performance of companies has been one of the major concerns of management experts, investors, and researchers. In view of this, Flayyih *et al.* (2022:5), opined that financial performance is the most important and reliable indicator, as it is a broad indicator of companies' ability to raise their income level. Therefore, this makes financial performance one of the most important aspects of financial management because one of the goals of financial management is to maximise the owner's wealth and profitability, which in turn, indicates better financial performance (Isayas, 2022:2).

Performance, according to Iswatia (2007), as cited by Korede (2017:41), is the function of a company's ability to gain and manage resources in several different ways to develop a competitive advantage. The author further revealed that there are two kinds of performance: financial performance and non-financial performance. For this study, financial performance was examined. Financial performance emphasises variables directly related to the financial report, which is a subjective measure of how well a company can use assets from its primary mode of business and generate revenues. According to Korede (2017:42), performance is a difficult concept in terms of both

definition and measurement. It has been defined as the result of activity. The appropriate measure selected to assess corporate performance is considered to depend on the type of company to be evaluated and the objectives to be achieved through that evaluation. The study of company performance has been an inexhaustible subject that has drawn the attention of several researchers. The performance of a company can be measured using different indices and by applying different methods; however, profitability ratios are the key measures of a company's overall efficiency and performance widely used by stakeholders (Destriwanti *et al.* 2022:28). According to Abdullah and Tursoy (2023:84) pointed out that there are different measures of financial performance used in the literature. Generally, scholars use accounting measures such as return on assets, return on equity, and return on investment among others. All these approaches differ from each other, but they provide a clear picture of management's effectiveness and efficiency (Anuar *et al.* 2019). For this study, return on assets (ROA) is discussed because it was used to measure financial performance.

2.8.1 Return on assets

According to Okudo *et al.* (2023:493), the return on assets reveals the amount of profit a company earns from its assets. That is, it serves as an indicator of how profitable a company is relative to its assets and gives an idea of how efficient a company's management is in using its assets to generate earnings. Hassan *et al.* (2014) and Korede (2017:42) describe ROA as an important standard for changing how efficiently financial management employs the average amount that is invested in the company's assets, whether the amount comes from investors or creditors. A low level of ROA shows that the profits are low for the amount of assets. The return on asset ratio calculates how efficiently profits are being collected from the assets employed (Mei Fanesia & Baktiono, 2023:37). Most of the shareholders who invest their funds in the company expect a return on the investment, so the ROA ratio shows how much the company can invest so that it can generate the desired earnings. For the funds invested by shareholders to yield a greater profit, the company should utilise available resources to their maximum level for a better return. Therefore, ROA observes the increase or decrease of a company's financial operations based on the available resources (Olusola *et al.* 2022). In the words of

Wahyuni and Hariyanto (2022:29), the return on asset ratio explains how efficient a company is at utilising its assets to generate more profit. The higher value of return on asset shows better performance. According to Gunawan *et al.* (2022:21), “return on assets” expresses the net income earned by a company as a percentage of the total assets available for use by that company. ROA suggests that companies with higher amounts of assets should be able to earn higher levels of income.

Mathematically Return on assets is calculated as:

$$\frac{\text{Profit or loss before interest and tax}}{\text{Total asset}} \quad (\text{Bulenga, 2019:11}).$$

In summary, financial performance is the function and ability of a company to manage its resources (cash and raw materials) in different ways to gain profit and develop a competitive advantage. Financial performance is measured in many ways, but for the purpose of this study, ROA was chosen. The reason is that ROA gives a clearer view of a company’s performance and reveals the amount of profit a company earns from its assets.

2.9 Theories adopted

In this segment, two theories were adopted to underpin this study. The theories are the trade-off theory and the pecking order theory.

2.9.1 Trade off theory

The trade-off theory offers a conceptual framework for comprehending how organisations manage their financing choices, considering aspects such as firm size, leverage, sales growth, operating cycle, GDP, inflation rates, exchange rates, and financial performance (Abbana & Marimuthu, 2023:64). This theory posits the existence of an ideal equilibrium between debt and equity financing, where the advantages of tax shielding provided by debt are carefully considered in relation to the drawbacks associated with financial hardship. The trade-off theory is closely connected to the analysis of firm-specific features (Madubuike & Ebere, 2023:52).

The size of a firm plays a crucial role in the trade-off theory, significantly impacting the financial performance choices made by companies. Big companies, characterised by their substantial assets and resources, often use their size to take advantage of debt financing (Agyei *et al.*, 2020). The appeal of this rests in the capacity to enhance operations and quickly get cash at a reduced cost of capital, thereby enabling ambitious companies and strategic initiatives. The strategic utilisation of debt is in accordance with the core principle of the trade-off theory, which highlights the tax benefits linked to interest payments. Nevertheless, the accompanying dangers of financial hardship become more significant for bigger companies due to the considerable scale of their activities (Nguyen *et al.*, 2020). Therefore, it is crucial for larger companies to carefully and precisely adjust the ratio of debt to equity. This is necessary as they strive to optimise the benefits of their large size while also protecting themselves from the possibly amplified expenses associated with financial difficulties (Le *et al.*, 2021). Empirical research consistently confirms that bigger companies have a positive link with leverage, indicating their tendency to include debt as a significant factor in their choices about financial performance (Lindset *et al.*, 2023). The complex relationship between firm size, its use of debt, and the trade-off theory highlights the detailed factors that influence the financial performance of bigger firms.

The research considers firm size as an independent variable to examine how companies manage the balance between debt and equity. According to Rusnák *et al.*, (2023), companies with significant assets often use debt strategically to optimise and improve their financial performance. Nevertheless, the possible expenses related to financial difficulties that come with bigger companies need a meticulous adjustment of the ratio between debt and equity, which in turn affects the overall financial performance.

Leverage, an essential element in the trade-off theory, refers to the percentage of a company's funding that comes from debt. The theory posits that as a corporation increases its leverage, it might benefit from tax shielding associated with interest payments (Lian *et al.*, 2023). Nevertheless, this calculated financial tactic is not devoid of risks, as mounting expenses mixed with economic hardship, including the threatening possibility of insolvency, become increasingly evident. Empirical studies undertaken by scholars such as Hovakimian *et al.* (2001) and Frank and Goyal (2004) have shown the

ongoing significance of target debt levels. These studies highlight the persistent tendency of companies to lean towards these ideal levels, emphasising a deliberate attempt to optimise the balance between leverage for improved financial performance. It is important to understand that the ideal level of leverage, as proposed by the trade-off theory, is not a universal measure. Instead, it varies depending on the unique characteristics of various businesses and the current economic circumstances. This acknowledgment introduces an additional level of intricacy to the process of making strategic decisions, compelling organisations to traverse a constantly changing environment where the pursuit of maximum advantage is affected by firm-specific factors and larger economic swings.

Based on Agyei *et al.*, (2020), leverage, a crucial factor, directly affects the financial performance of a company by influencing its risk profile. As a company grows its leverage, it benefits from tax shielding on interest payments but also risks rising expenses associated with financial crisis (Antonio *et al.*, 2021). Empirical research that supports certain debt levels highlights the need of attaining an ideal leverage ratio to improve financial performance.

Sales growth is a crucial factor in the trade-off theory, and it greatly impacts the strategic financial choices made by organisations (Fourati, 2021). Amidst the fast development of businesses, companies who are experiencing significant increase in sales may choose to strategically use debt funding to support their ambitious growth plans. The appeal of debt stems from its ability to provide prompt access to cash at a relatively lower cost, enabling the achievement of expansion goals (Roy & Bandopadhyay, 2021). Nevertheless, this strategic decision brings about a subtle compromise since increased leverage simultaneously magnifies the inherent dangers linked to financial difficulties. According to McCarthy and Pearlman, (2022), the trade-off theory suggests that companies must carefully evaluate the additional advantages and disadvantages of taking on more debt while trying to achieve sales growth in a constantly changing business environment. This emphasises the need for a capital structure that is flexible and responsive, able to adjust to the changing conditions of a firm in transition. The acknowledgment of the delicate equilibrium between maximising sales development and effectively handling financial risks adds a level of intricacy to the process of making

financial decisions, compelling companies to design a strategy plan that maximises growth while cautiously minimising the dangers of excessive leverage (Pallasdies *et al.*, 2021).

Sales growth brings about a dynamic aspect, illustrating how companies handle the balance between the benefits of using debt to finance development and the potential problems of increased leverage (Wang *et al.*, 2023). In the word of Agustian *et al.*, (2023), the connection between financial success and the company's capacity to maintain a stable financial performance while reacting to changing business conditions is crucial. It is essential to ensure that the pursuit of sales growth is in line with long-term financial stability.

By including macroeconomic factors such as GDP, inflation rates, and exchange rates, the trade-off theory may be extended to provide a more thorough understanding of its consequences in the wider economic context. The macroeconomic factors significantly impact a company's strategic financial decisions, especially when it comes to determining its financial performance (Bolund, 2020). The state of the economy significantly influences the accessibility and expense of borrowing money, which in turn has a noticeable effect on a company's decision-making. Amidst moments of strong economic development, companies may have an increased tendency to use debt as a means to stimulate expansion. The positive outlook resulting from favourable economic circumstances promotes a proactive strategy, use debt to quickly obtain resources and take advantage of prospects for expansion. On the other hand, when the economy is in decline, companies tend to adopt a more cautious approach and prioritise equity financing as a tactic to reduce risk. During times of economic uncertainty, the trade-off theory proposes adopting a more careful and robust financial approach. This involves finding a careful balance between using debt to promote development and strengthening the financial performance to mitigate increased risks (Rajesh, 2021). The complex relationship between the trade-off theory and macroeconomic factors highlights the ever-changing character of choices about financial performance, inextricably connected to wider economic patterns and variations.

The relationship between GDP growth and the trade-off theory becomes apparent in the context of increased business possibilities and positive prospects for companies. A robust GDP often indicates a favourable climate for companies pursuing growth and a larger portion of the market (Bolund, 2020). Amidst this advantageous economic environment, organisations may strategically use debt leverage to take advantage of the increase in growth prospects (Kassouri & Altıntaş, 2020). The trade-off approach acknowledges the attractiveness of using debt to finance development in some situations, but emphasises the need of doing a detailed assessment that goes beyond the immediate advantages. An essential aspect of this assessment is a keen recognition of the possible expenses linked to financial hardship, a factor that becomes more prominent during periods of economic decline.

The trade-off theory suggests that companies should carefully consider the advantages and disadvantages of taking on debt, especially during times of strong economic development (Aum *et al.*, 2021). While debt may seem to be an appealing way to finance expansion, companies must also consider the increasing expenses associated with financial difficulties. The expenses associated with economic downturns, which often coincide with a shrinking GDP, are intensified. This emphasises the need for a prudent and equitable approach when making choices about financial performance (Muthukrishnan *et al.*, 2020). The trade-off theory suggests that it is important to make financing decisions that are in line with the current economic circumstances. This theory emphasises the need for careful planning and risk management when dealing with debt leverage in a constantly changing economic environment.

Inflation rates and exchange rates add complicated levels of complexity to the trade-off theory. High inflation rates may have both positive and negative effects for companies that rely on debt financing (Ai *et al.*, 2020). Although, they may reduce the actual value of debt. However, on the other hand, they can also create challenges for these companies. From one perspective, the reduced actual weight of debt might be seen as beneficial, leading companies to deliberately use debt in times of inflation (Eckbo & Kisser, 2020). Conversely, the trade-off approach promotes a thorough evaluation that goes beyond the

obvious advantages, exploring the complex interaction between inflation and its effect on debt dynamics.

Exchange rate changes add a dynamic factor to the calculation of financial performance choices. Companies are forced to carefully assess the currency breakdown of their debts due to the significant impact it has on the cost of repaying debt denominated in foreign currencies (Nguyen *et al.*, 2020). According to Djalo *et al.*, (2023), the trade-off theory emphasises the need of adopting an optimal financial performance that carefully manages the challenges posed by fluctuations in exchange rates. This highlights the theory's focus on carefully managing the trade-off between the benefits of borrowing money in a high inflation environment and the potential difficulties caused by changes in currency values. The goal is to create a strong and flexible financial framework that aligns with the overall business goals of the companies (Athari *et al.*, 2020).

According to Ai *et al.*, (2020), macro-economic parameters, such as GDP, inflation, and exchange rates, provide a wider view by taking into account external economic situations. These variables impact a company's choices on financing, as the trade-off theory's claim that economic circumstances determine the accessibility and expense of debt financing. Companies proactively connect their financial performance with existing macroeconomic trends to optimise financial results and avoid risks. This relationship to financial performance involves responding to times of expansion or downturns (Muthukrishnan *et al.*, 2020).

The trade-off theory suggests that the complex interplay between these separate factors shapes a company's capital structure, which in turn affects its financial performance (Izhakian *et al.*, 2022). The theory provides a framework for companies to achieve an ideal balance by effectively using debt financing while managing the associated expenditures, hence influencing their total financial performance (Azofra *et al.*, 2020).

Although the trade-off theory is widely used and has theoretical appeal, it is not exempt from limits and objections. An important drawback is its excessive focus on the tax advantages linked to debt financing (Homapour *et al.*, 2022). The idea posits that the tax

deductibility of interest payments is an unequivocal benefit, disregarding any scenarios where the advantages may be counterbalanced by elevated interest rates or other related expenses. This oversimplified perspective fails to acknowledge the nuanced characteristics of financial performance, which are often sophisticated and flawed, characterised by diverse investor preferences and behaviours that may not fully conform to the assumptions of the theory (Ullah *et al.*, 2020).

Another drawback is the restricted application of the trade-off concept across various firms and sectors. The theory adopts a uniform approach to determining the most suitable capital structure, without taking into account the varying risk profiles, borrowing capabilities, and specific capital market circumstances of each companies (Hung, 2021). For example, sectors or companies that are just starting out or have limited past performance may have difficulties in obtaining loans, which questions the widespread applicability of the trade-off theory's forecasts. In addition, the model's primary emphasis on financial variables, such as tax advantages and financial distress expenses, neglects non-financial elements like as reputation, corporate governance, and social responsibility, which may have a substantial impact on a company's financing choices (Chavleishvili *et al.*, 2023). This constraint emphasises the need for a comprehensive approach to making capital structure choices that takes into account both financial and non-financial aspects.

Although there are shortcomings, it is important to recognise the substantial qualities that have established the trade-off theory as a major paradigm in financial literature and, therefore, its application in this research (Narayan *et al.*, 2021). An important strength of the company is its ability to provide a well-organized and thorough comprehension of the intricate equilibrium that firms need to achieve between the advantages of using debt to finance their operations and the possible drawbacks related to financial difficulties (Kok *et al.*, 2022). The theory provides a clear and straightforward explanation for why companies choose for a certain combination of debt and equity in their capital structure by highlighting this trade-off.

Furthermore, the trade-off theory's ability to include dynamic elements, such as evolving economic circumstances and fluctuating risk situations, strengthens its practical

significance. The statement acknowledges that the ideal financial performance is not a fixed notion, but rather depends on variables such as GDP growth, inflation, and exchange rates. This flexibility is especially advantageous in comprehending how companies manage the intricate interaction of financial factors amongst changing macroeconomic environments.

Essentially, while every financial theory has its flaws, the trade-off theory remains useful because it effectively captures the crucial trade-offs and dynamics that organisations encounter when deciding on their ideal financial performance. The research utilises the theory's advantages to provide insight into the intricate connections between firm-specific attributes, macroeconomic factors, and financial performance in the Nigerian oil and gas, finance, and consumer goods sector.

2.9.2 Pecking order theory

The Pecking Order Theory in working capital management elucidates the deep relationship between a company's financing choices and several independent factors such as firm size, leverage, operating cycle, sales growth, inflation, GDP, and exchange rate (Bhandari *et al.* 2022). When it comes to the size of a company, bigger firms with significant assets usually prioritise using their own profits (retained earnings) to finance their operations. This aligns with the Pecking Order Theory, which suggests a preference for using internal money. Implementing this method of internal financing not only demonstrates financial strength to the market, but also reduces the expenses related to external stock issue, so improving the overall effectiveness of managing working capital (Hossain *et al.* 2021).

Within the domain of working capital management, the Pecking Order Theory places significant emphasis on leverage, highlighting a strategic preference for debt as a preferred external source of funding. Designed specifically to meet the requirements of working capital, organisations that operate within this theoretical framework may intentionally use short-term loan instruments to satisfy urgent operational requirements (Frank *et al.*, 2020). The strategic use of short-term debt serves two purposes in the

Pecking Order Theory. Firstly, it offers a flexible and efficient solution for meeting immediate financial needs. Secondly, it helps reduce the expenses related to signalling when issuing fresh shares. Firms may maintain optimum working capital dynamics by prioritising debt financing over equity, particularly when facing short-term financial demands (Chaklader & Padmapriya, 2021). This approach reflects a pragmatic and operationally driven strategy that aligns with the underlying premise of the theory.

Within the context of the Pecking Order Theory, the assessment of the operating cycle becomes a vital factor in determining a company's working capital needs (Yıldırım & Çelik, 2021). According to Kwak, (2020), firms facing prolonged operating cycle may choose short-term debt as a more appealing choice for funding, according to the idea. The inclination for short-term debt is based on its versatility, allowing companies to effectively manage the intricacies of their extended operating cycles and fulfil their financial responsibilities (Wijaya *et al.*, 2020). The strategic approach aligns with this theory primary focus on reducing information asymmetry and strengthening signalling power in financial decision-making. In the words of Elok and Astari (2021), companies purposefully choose short-term loans to adhere to the principles of the theory. This allows them to effectively manage the intricacies of their operating cycles while also maintaining financial prudence and demonstrating resilience in their working capital management.

The inclusion of sales growth as a key factor adds a subtle aspect to the implementation of the Pecking Order Theory in the management of working capital. The theory suggests that fast-growing companies may choose to use debt financing strategically in order to support and drive their growth efforts, taking advantage of the often cheaper cost of debt in comparison to equity (Wang *et al.*, 2021). Nevertheless, the fundamental compromise becomes evident when increased leverage magnifies the dangers linked to financial hardship. Within the realm of working capital management, this highlights the need of embracing a flexible and responsive capital framework. Companies should evaluate the additional advantages and disadvantages of taking on more debt as their sales expand. This highlights the need of adopting a smart and adaptable finance strategy that matches the changing conditions of their company operations. Companies, following the Pecking Order Theory, manage their working capital by carefully balancing the need for loans to

support expansion while also being cautious to minimise financial risks (Magerman *et al.*, 2020).

In the context of the Pecking Order Theory, inflation serves as an independent variable that adds a level of intricacy to the dynamics. The approach, which prioritises domestic financing above external sources, addresses the effect of high inflation rates on the actual worth of debt (Tran, 2022). During periods of high inflation, the actual weight of debt falls, which may be advantageous for firms that use debt financing as part of their working capital strategy. This is consistent with the theory's inclination towards internal financing, since it reduces the depreciation of actual debt value linked to inflation. Moreover, the dynamics of the Pecking Order are further complicated by the swings in exchange rates (Naranjo *et al.*, 2020). Companies must thoroughly evaluate the currency composition of their obligations in order to achieve an ideal working capital structure. Fluctuations in exchange rates may affect the expenses associated with repaying debt in foreign currencies, leading to a careful assessment of the distribution of different currencies within the overall financial framework (Naranjo *et al.*, 2020). By following the theory, companies effectively manage their working capital by taking into account both internal and external financing challenges, as well as larger economic issues like inflation and exchange rates.

The Pecking Order Theory, while providing useful insights into company's' financing choices, has intrinsic strengths and flaws. One of its significant qualities is its ability to accurately mirror real-world financial behaviours. The theory recognises the presence of information asymmetry in financial markets and states that companies tend to choose internal funding, such as retained profits, rather than external sources, in order to avoid signalling negative information to investors (Toader *et al.*, 2021). The theory is a useful paradigm for analysing finance choices since it accurately reflects real-life observations.

Nevertheless, the idea has its limits. An important drawback is in its notion that external finance, namely the sale of shares, serves as an indicator of unfavourable information. Although the theory posits that companies turn to equity financing only when they lack adequate internal money, this perspective may oversimplify the underlying reasons for

issuing stock. Based on Yakubu *et al.*, (2021), companies may choose to issue stock as a strategic measure, mostly to finance growth prospects, rather than as a result of financial difficulties. Furthermore, the theory fails to provide direction about the most advantageous capital structure, allowing companies to manage the balance between internal and external funding without a definitive standard (Sadiq *et al.*, 2023). Another limitation is the theory's applicability across various sectors. The Pecking Order Theory may not fully include the intricacies of businesses with distinctive finance requirements or those marked by rapid technical advancements (Alghifari *et al.*, 2022). Under some circumstances, companies may diverge from the established hierarchy to satisfy special demands, hence questioning the universality of the idea.

Although the theory has recognised shortcomings, it continues to be a relevant and extensively used paradigm in academic research for several reasons. First and foremost, the theory offers an accurate depiction of how organisations make choices about their funding in the actual business environment (Fikasari & Bernawati, 2021). The focus on information asymmetry and the inclination towards internal finance are consistent with real-world observations of company conduct. According to Vedasto and John, (2020), the practicality and intuitiveness of the Pecking Order Theory make it an effective tool for comprehending the dynamics of working capital management. Furthermore, the theory is especially beneficial in circumstances when access to information on a company's financial well-being is not easily accessible or comes at a high cost (Vedasto & John, 2020). In such instances, companies may give precedence to internal funding in order to prevent the transmission of potentially adverse indications to the market. The theory's capacity to include these factors makes it a relevant and useful paradigm, particularly when examining sectors or firms confronted with uncertainties or issues related to information asymmetry. Moreover, the Pecking Order Theory's inherent adaptability enables it to be applied to other situations and sectors. Although it does not provide a universal answer, its fundamental ideas may be used and customised to suit individual organisational traits and industry dynamics (Ahmed & Sabah, 2021). The versatility of this tool increases its usefulness in various research environments and makes it an

appropriate option for investigating the correlation between certain features of a company and the management of working capital in the study.

Despite its limitations, the theory remains relevant in the research due to its basis on empirical data, applicability to information-sensitive situations, and flexibility. The researchers acknowledge the practical insights and explanatory power of this framework in understanding corporate finance choices. They consider it relevant for studying working capital management in their specific research environment.

2.10 Chapter summary

This chapter discussed the conceptualisation of working capital and the types of working capital, which are classified based on the balance sheet view and the operating cycle view. The balance sheet view is divided into gross working capital and net working capital, while the operating cycle view is divided into permanent/fixed working capital and temporary/variable working capital. Permanent/fixed working capital is further subdivided into reverse working capital and regular working capital, while temporary/variable working capital is subdivided into seasonal working capital and special working capital.

Current assets and current liabilities were also discussed. Techniques for the analysis of working capital, ratio analysis, and the current ratio were discussed. Sources of working capital, which are divided into long-term/permanent sources and short-term sources, were considered accordingly. Dangers of excess or insufficient working capital and factors influencing working capital were highlighted in five categories: Nature and size of business; manufacturing cycle; price level changes; credit policy; and operating efficiency. The existence of either an excessive or insufficient amount of working capital may hinder an organisation's ability to take advantage of opportunities, address challenges, and sustain financial stability in a dynamic business environment. The aforementioned components demonstrate unique interactions within the specific environment of each organisation, emphasising the need of careful consideration and management of working capital.

The concept of working capital management was also discussed, providing some researchers' views about the definition of working capital management and its explanations. The components of working capital management, which are divided into accounts receivable management, accounts payable management, inventory and stock management, operating cycle and liquidity management, and cash management, were given a detailed explanation. Also, the approach to working capital management was discussed and subdivided into three categories: aggressive approach, moderate/matching approach, and conservative approach. These were explained accordingly, and finally, under the concept of working capital management, the importance of working capital management was discussed.

The concept of financial performance was presented, which is proxied by ROA as the measurement of financial performance used for this study. Finally, the theories adopted to underpin the study were also discussed in this chapter.

The next chapter discuss a literature review on firm-specific characteristics (internal factors), which is one of the independent variables for this study, and how they impact the financial performance and working capital management of a company.

CHAPTER 3: LITERATURE REVIEW OF FIRM-SPECIFIC CHARACTERISTICS ON FINANCIAL PERFORMANCE AND WORKING CAPITAL MANAGEMENT

3.1 Introduction

This chapter reviews the literature on the independent variables chosen for this study, which are firm-specific characteristics (firm attributes) and their impact on financial performance and working capital management in a company. This study used four internal factors to proxy firm-specific characteristics. These are firm size, leverage, operating cycle, and sales growth. The chapter is organised to cover the conceptualisation of the key terms. Therefore, this chapter discusses the concepts of firm-specific characteristics and how the chosen internal factors impact financial performance and working capital management.

3.2 Concept of firm-specific characteristics on financial performance and working capital management

In this segment, the definition of firm-specific characteristics is discussed as defined by different authors, as well as their impact on financial performance and working capital management in a company.

Firm-specific characteristics are factors that are mostly under the direct control of management. The firm characteristics include firm size, liquidity, leverage, sales growth, and firm age. On the other hand, macroeconomic variables are factors that are beyond the control of management. They include inflation, interest rates, gross domestic product, and exchange rate (Dioha *et al.* 2018:16). The firm-specific characteristics, which are the internal factors of an organisation that focus on financial performance and working capital management, are grouped into financial variables and non-financial variables. The financial variables can be derived from the financial statements of a company. These include firm size, sales growth, liquidity, and leverage. On the other hand, non-financial variables cannot be obtained from the financial statements of a company. These comprise the age of the firm, management competencies, and scope of operation (Ehiedu & Imoagwu, 2022:143). This means that the impact of firm-specific characteristics on

financial performance and working capital management of listed companies in Nigeria can be ascertained by using firm-specific characteristics (internal attributes) and macroeconomic variables (external factors) as key determinants of a company. Firm-specific characteristics should be considered when managers make decisions about investing and financing working capital (Ozele & Sunny, 2023). If companies perform poorly in managing their working capital, the number of current liabilities will affect the company's performance, and if this happens continuously, it will affect the financial position of the company, which may finally lead to default (Zariyawati *et al.* 2016:366).

According to Abdulkarim *et al.* (2019:31), firm-specific characteristics are factors that are within (endogenous) a company and can influence its financing decisions. Most of these factors are within the control of the company's management because they are firm attributes or characteristics that are financial in nature. Egbunike and Okerekeoti (2018:147) described firm-specific characteristics as a company's demographic and managerial variables, which in turn, comprise part of the company's internal environment. According to Muraya (2018:4), firm-specific characteristics are internally generated within the company, and affect the company directly. The firm-specific characteristics express how a specific company could maximise its production and capacity, so it could lower prices and better compete in its industry.

Based on Akuno and Kariuki (2019:44), most firm characteristics are interconnected with a company's financial performance. Non-financial characteristics and financial characteristics, such as firm size, leverage, firm age, and liquidity, normally influence organisational growth positively or negatively. This means that the financial characteristics and non-financial characteristics influence the financial performance and working capital management of a company positively or negatively. According to Kazeem (2015:14), theoretically, the level of a company's profit is influenced by the level of revenue and expenditure. These two factors, revenue and expenditure, are influenced by firm-specific factors or characteristics (financial and non-financial factors). In the words of Arthur-Aidoo *et al.* (2018:489), a firm's characteristics refer to the growth strategies for management personnel and the entire company. The determinants of firm-specific

characteristics have a great influence on the growth of a company. The features of the firm, such as size, age, human capital, among others, may influence the company's growth pattern regarding its strategies. According to Pervaiz and Akram (2019:18), companies can maximise their profit through the effective management of working capital, and the performance of any company is affected by the decisions regarding their working capital.

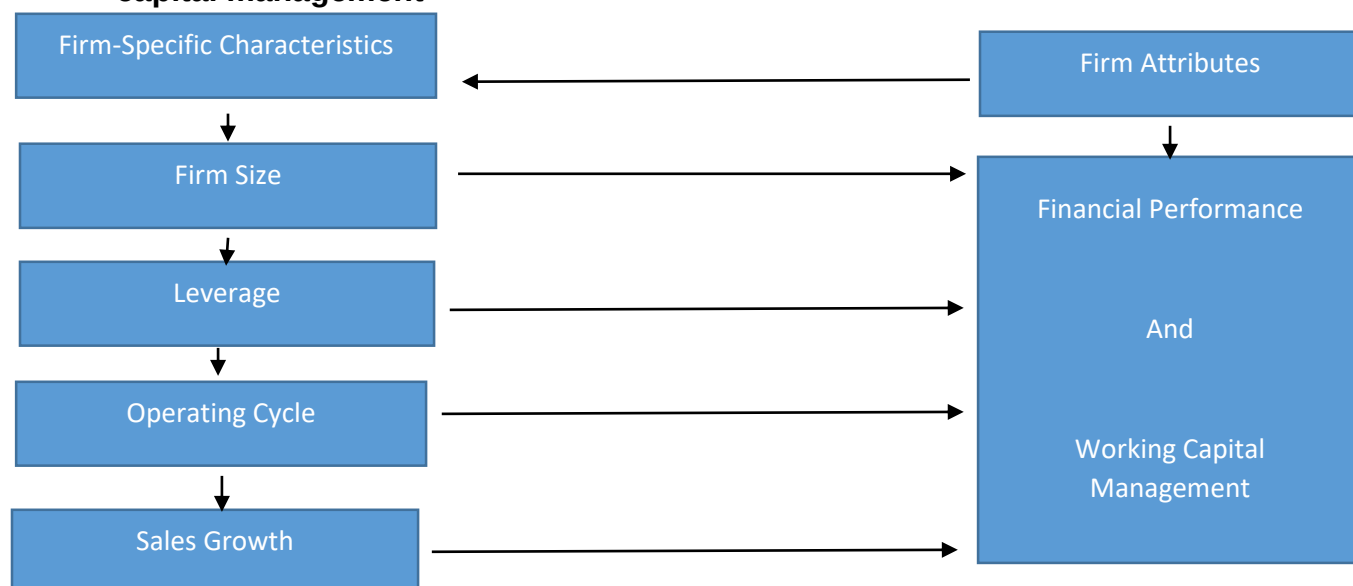
This study defines firm-specific characteristics as internal factors that the management of a company uses in directly controlling the affairs of their company. In other words, a firm's characteristics are those internal factors that are controlled directly by the management of a company, and they are grouped into financial variables and non-financial variables. Financial variables are the variables that can be derived from the statement of financial position or statement of comprehensive income. These are firm size, premium growth, leverage, the tangibility of assets, along with others. Non-financial variables are those that cannot be derived from the statement of financial position or statement of comprehensive income. These are the firm's age and scopes of operation. This chapter concentrates on the internal factors only.

There are different forms of firm-specific characteristics (internal factors), depending on the nature of the research to be conducted. For this study, four firm-specific attributes, as stated earlier, were considered and are discussed.

3.3 Conceptualisation of key terms

The figure below gives an illustration of the firm-specific characteristics (internal factors) that determine the financial performance and working capital management of a company.

Figure 3.1: Firm-specific characteristics on financial performance and working capital management



Source: Author design based on literature

In the above figure, the financial performance and working capital management of companies can be assessed at the internal levels of the company. Internal factors refer to how firm-specific characteristics such as financial and non-financial attributes affect the financial performance and working capital management of listed companies in Nigeria. This chapter addresses only the financial attributes.

The next paragraph examines the impact of firm size (an internal attribute) on financial performance and working capital management of a company, as identified by different authors and the measurement used to measure firm size for this study.

3.4 Firm size, financial performance and working capital management

According to Mikial *et al.* (2022:112), firm size can be measured in terms of asset base, number of employees, sales volumes, and capital investment values. Big companies enjoy economies of scale that accrue due to their size; and they enhance their financial performance as compared to small companies (Akuno & Kariuki, 2019:44). According to Bobenic *et al.* (2020:117), most studies have proven that larger companies generate higher profits and thus show a positive relationship between firm size and financial

performance. However, according to Kazeem (2015:62), firm size negatively influences the financial performance of a company. This implies that the larger the company, the lower the reported financial performance. The reason given is that as the company grows, it becomes difficult for owners to monitor and control aberrant behaviour by managers who pursue size-related objectives rather than maximising shareholders' wealth. According to Abubakar *et al.* (2018:7), firm size positively impacts financial performance; this shows that the size of a company's assets is a determinant of the company's performance.

Firm size can classify a company as big or small, based on the total assets owned or the total sales created by the company. The greater the size of a company, the more activities are carried out by the company and this will get more attention from external parties, such as the government, creditors, investors, and so on, compared to smaller companies (Kartiningsih & Daryanto, 2020:70).

Companies of all sizes demonstrate the sensitivity of their profit and market performance to the efficient management of their working capital. However, each category of company (small or large) exhibits relatively more responsiveness to the proficiency of their working capital management. Large companies have more external providers of funds and, therefore, experience more external pressure than small companies to report on time (Saeedi *et al.* 2020:132). Presumably, small companies and large companies are different from each other in that working capital management may affect more (or less) the performance of one or the other (Hussain, 2021). The size of the company directly affects the working capital requirements. The larger the size of a company unit, generally, the larger the requirements for working capital. However, in some cases, even a smaller company may need more working capital because of high overcharges and an inefficient use of resources (Ketema, 2018:12). According to Abiodun (2013), as cited by Ketema (2018:13), the size of a company plays an important role in determining the kind of relationships the firm enjoys within and outside its operating environment. The larger the company, the greater the influence of its stakeholders. It is argued that corporate size influences corporate working capital management since large companies have more

bargaining power over customers (receivables) and supplies (payables) than small companies. A large company can negotiate with its suppliers to receive positive credit terms, including large quantity discounts and long payment terms, which allows them to become well-established and have higher inventory turnover than small companies (Naser *et al.* 2013:15).

In the work of Marobhe (2015:115), firm size negatively influences working capital management; this indicates that as the company grows, working capital management also increases. As a result of these factors, companies end up having low working capital because they deal with a lot of aspects that require working capital as compared to their smaller counterparts. Uyar (2010:186) examined the relationship between working capital management measured by cash conversion cycle and corporate size in a sample of companies listed on the Istanbul Stock Exchange. The study observed a significant negative relationship between working capital management and corporate size. Also, Rimo and Panbunyuen (2010), cited by Naser *et al.* (2013:15) explored the relationship between working capital management measured by the cash conversion cycle and corporate size measured by total assets. They reported a negative relationship between working capital management and firm size. This was also in line with the work of Naser *et al.* (2013:21), who also recorded a negative and significant relationship between working capital management and firm size. It could be concluded that working capital management is more effective for the large companies surveyed in their study.

This study defined firm size as the measurement of the asset level of a company that is used to generate future economic benefits in terms of profitability. According to Kartikasari and Merianti (2016), firm size can be measured by the natural logarithm of total assets or the natural logarithm of total sales. This study used the natural logarithm of total assets to measure the impact of firm size on financial performance and working capital management of listed companies in Nigeria, as indicated below:

Firm size = the natural logarithm of total assets (Dioha *et al.* 2018:22).

The next paragraph considers the impact of leverage (an internal factor) on financial performance and working capital management of a company, as discussed by different authors, and the measurement used to measure leverage for this study.

3.5 Leverage, financial performance and working capital management

Leverage, also known as the gearing ratio, is the percentage of corporate assets financed by liabilities (Okwii-Njelita & Egbunike, 2022:35). "Leverage", according to Abdulkarim (2017:14), can simply be seen as the amount of debt that a company uses to finance its assets. However, Nissin and Penman (2004), cited by Abdulkarim (2017:14), classified leverage in two ways: financial leverage and operating leverage.

According to Ehiedu *et al.* (2022:429), financial leverage occurs because of financing activities such as the purchase of an asset and is related to fixed debt costs. Operating leverage results from operating activities that deal with the degree to which a firm incurs a combination of fixed and variable costs (Rahmawati & Sudaryono, 2022:336). According to Mohammed (2017:20), financial leverage is the use of borrowed money to increase production volume, sales, and earnings of a company for better performance. The greater the amount of debt, the greater the financial leverage of a company (Towo, 2022).

On the other hand, operating leverage is the extent to which a company commits itself to a high level of fixed operating costs that vary with time, such as insurance, rent, and salary, with no interest attached to them (Eguavoen *et al.* 2022:5). According to Mohammed (2022:15), companies with a high level of operating leverage have high break-even points, but when the break-even point is crossed, they show a greater increase in operating income with every increase in sales revenue and greater losses with every drop in sales revenue. This study addresses leverage in general; as it combines both financial and operating leverage. According to Omondi and Muturi (2013:100), leverage refers to the proportion of debt-to-equity in the capital structure of a company. It strives to measure what portion of the total assets is financed by debt funds. The lower the leverage of a company, the lower the cost of funds used in financing

working capital and the longer the cash conversion cycle (Rajabi, 2016:22). Leverage is the amount of debt used to finance other capital expenditures that can improve a company's financial performance (Egbunike & Okerekeoti, 2018:148).

According to Zhao and Fang (2022), the ratio of total liabilities to total assets serves as a proxy for leverage. It shows the degree to which a company is using borrowed money. Highly leveraged companies may be at risk of bankruptcy if they are unable to make payments on their debt. They may also be unable to find new lenders in the future. Leverage is not always bad because it can increase the shareholder's return on their investment and make good use of the tax advantages associated with borrowing (Kazeem, 2015:13). According to Qian (2016:17), when managing the cost of financing working capital, it is expected that companies with a higher leverage ratio must pay a higher risk premium. Hence, a company with more debt has less internal financing, and there could be less capital available for daily operations. A company with a rising debt ratio should pay more attention to its working capital to avoid getting stuck in the operating cycle (Afza & Nazir, 2008, cited by Qian, 2016:17). Abbadi and Abbadi (2013) and Banos-Cabellero *et al.* (2010) found a negative relationship between working capital management and when a company's leverage is increased as cited by Qian (2016:17), while Rimo and Panbunyuen (2010), cited by Naser *et al.* (2013:17) investigated the relationship between working capital management measured by cash conversion cycle and debt ratio (leverage) and found a positive relationship between the two variables. The result indicates that an increase in the cash conversion cycle period increases the debt ratio.

A higher debt ratio shows a higher level of indebtedness and more financial leverage because of the greater amount of other people's money used to generate profits (Kartiningasih & Daryanto, 2020:70). Gitman (2015:126), cited by Kartiningasih and Daryanto (2020:70) explain that the debt ratio measures the proportion of a company's total assets financed by creditors. Fulfilment of funding sources from debt will affect the company's level of the leverage ratio because it shows how much assets the company has funded from external parties. Companies with high leverage ratios indicate a poorer

financial condition because those companies are running their operating activities mostly on debt (Kartiningih & Daryanto, 2020:70).

This study defines leverage as the use of debt (borrowings) by a company to fund its operations and expansion of projects to generate a return for shareholders. This study used total debts divided by total assets to measure the impact of leverage on financial performance and working capital management of listed companies in Nigeria. Total debt divided by total assets (leverage ratio) determines the financial risk of a company. It shows how much of a company's liabilities are owned by creditors, compared with how much of the company's assets are owned by shareholders.

$$\text{Leverage} = \frac{\text{Total debt}}{\text{Total asset}} \quad (\text{Bon \& Hartoko, 2022:10}).$$

The next paragraph discusses the impact of operating cycle (an internal factor) on financial performance and working capital management of a company, as highlighted by different studies, and the measurement used to measure operating cycle for this study.

3.6 Operating cycle, financial performance and working capital management

The operating cycle refers to the total amount of time taken from the purchase of raw materials until the raw material sales proceeds are realised (Aldubhani *et al.* 2022:72). According to Husaria (2015:10), the operating cycle is defined as the length of time from the commitment of cash for purchases until the collection of receivables resulting from the sale of goods or services. Mathematically, a company's operating cycle is equal to inventory turnover in days plus receivable turnover in days. Pandey (2005), cited by Lawal (2017:37) referred to the operating cycle as the gross operating cycle, which is made up of the inventory conversion period and the debtors conversion period, which is the inventory conversion period plus the debtor's conversion period.

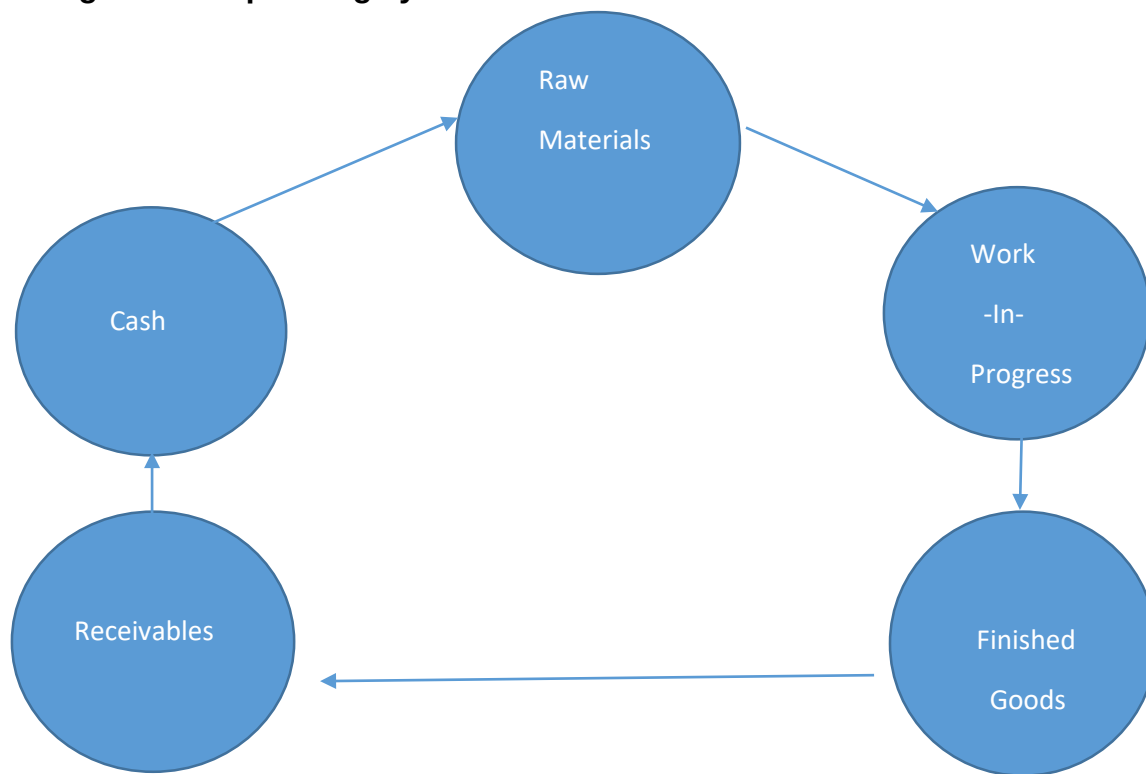
The inventory conversion period measures the average length of time between acquisition and sales of merchandise, while the debtors' conversion period measures the

average number of days from the sale of goods to the collection of resulting receivables. According to Lawal (2017:37), the amount a firm will invest in current assets is determined by its operating cycle. It estimates the working capital requirements based on the average holding period of current assets and relates them to costs based on the company's experience in previous years. The operating cycle begins as inventory, is converted into accounts receivable when it is sold, and is finally converted to cash when cash is collected from sales. Atseye *et al.* (2015:4) also define the operating cycle as the number of days it takes a company to convert its inventory to cash; that is, the number of days it takes the company to produce from raw materials, to sell what is produced, and to collect monies due from the purchase. According to Korede (2017:51), the operating cycle is one of the measures of the efficiency of working capital management. It takes into consideration the receivables and inventories related to working capital. The cycle traditionally commences from the receipt of raw materials to the collection of receivables from debtors of the stock sales produced from those raw materials.

The operating cycle is important because it determines the amount of working capital a company needs (Duru, 2014:34). The function of any trading unit is to procure raw materials, process them into finished goods, sell the finished goods, and realise money so that the money received can be utilised to procure raw materials again. This process has been done continuously. According to Ghosh *et al.* (2004), cited by Duru (2014:34), if the turnover period for inventories and account receivable lengthens or the payment period for account payable shortens, then the operating cycle will lengthen and the investment in working capital will increase.

The figure below gives a clear illustration of how the operating cycle works in a company from the start to the end.

Figure 3.2: Operating cycle



Source: Author design based on literature

The above figure provides an understanding of how the operating cycle works in a company. It takes five stages for an organisation to complete its operating cycle. The first stage is the procurement of raw materials from natural resources; these raw materials are then processed to form a suitable product for the company. The process of processing the raw materials is called the work-in-progress, which is known as the second stage. The third stage is the result of the product produced by the converted raw materials, which is the finished goods. The finished goods produced are then sold to the customers, and cash is received for the items sold. This stage is called the fourth and fifth stages, which complete the operating cycle process. The cash received will now be used to procure raw materials for the cycle to be repeated.

Any company's operating cycle, which depends on working capital management, is reduced when they manage working capital efficiently. A company with a long operating cycle requires more efforts to efficiently manage working capital (Mohsin *et al.* 2019:31). Some studies have proven an inverse relationship between working capital management

and the operating cycle, for example the work of Afza and Nazir (2011) and Deloof (2003). On the other hand, Onaolapo and Kajola (2015:123) proved that there exists a positive relationship between working capital management and the operating cycle (Mohsin *et al.* 2019:31).

This study defines the operating cycle as the average period required for a company to make an initial outlay of cash to produce goods, sell the goods, and receive cash from customers in exchange for the goods sold. This study used the inventory conversion period plus the receivable conversion period to measure the impact of the operating cycle on financial performance and working capital management of listed companies in Nigeria. The inventory conversion period and receivable conversion period play a major role in determining the efficiency of a company.

Operating cycle = Inventory Conversion Period + Receivables Conversion Period.

Where:

Inventory Conversion Period = $\frac{\text{Inventory}}{\text{Cost of sales}} \times 365\text{days}$

Receivables Conversion Period = $\frac{\text{Accounts receivables}}{\text{Annual sales}} \times 365\text{days}$ (Danyadado & Jinjiri, 2022:96).

The next section considers the impact of sales growth (an internal factor) on financial performance and working capital management of a company, as discussed by different authors, and the measurement used to measure sales growth for the study.

3.7 Sales growth, financial performance and working capital management

According to Baehre *et al.* (2021:73), sales growth is the percentage change in sales from one year to another. Companies experiencing high sales growth rates need to have efficient working capital management to finance such growth (Naser *et al.* 2013:16). According to Komba (2017:27), sales growth is the ability of the company to generate more revenue in the current financial year in comparison with the previous financial year. Companies that are expected to grow in the future tend to use stock to finance their

operational activities. According to Qian (2016:17), the variable that measures sales growth also affects working capital management. This is because the working capital management will be affected as it will not be stable when there is an increase or decrease in the previous year's sales compared to the present year's sales.

One of the implications of the pecking order theory is that a company that expects more growth opportunities will need more capital in the future, which in turn, will require more internal financing (Qian, 2016:17). Kieschnick *et al.* (2006) discovered a positive relationship between the cash conversion cycle proxy for working capital management and sales growth. Mansori and Muhammad (2012:19) also found a positive relationship between a company's sales growth and working capital management. This is because the anticipation of future sales growth might cause an increase in the amount of investment in inventories. While a negative relationship between working capital management and sales growth was found by Zariyawati *et al.* (2010), as cited by Qian (2016:17), Rimo and Panbunyen (2010), as cited by Naser *et al.* (2013:17) tested the relationship between working capital management measured by cash conversion cycle and sales growth in a sample of Swedish companies. They also noticed a negative relationship between the two variables and concluded that the surveyed companies are efficient in managing their working capital. Naser *et al.* (2013:20) also found a negative and significant relationship between sales growth and working capital management as measured by the cash conversion cycle. This implies that the cash conversion cycle reduces when sales growth increases. This is a sign of effective working capital management. Companies with high sales growth are expected to have a fast cash conversion cycle to finance such growth.

This study defines sales growth as the increase in a company's sales over a given period. It is a strategic indicator that is used in decision-making by the executives and the board of directors of a company to influence the formulation and execution of the company's business strategies. This study used the current year's sales minus the previous year's sales divided by the previous year's sales to measure the impact of sales growth on financial performance and working capital management of listed companies in Nigeria. It

shows whether a company generates more revenue in the current year compared to the previous year and whether the company is performing well or not.

Sales growth = Current year's sales – Previous year's sales

Previous year's sales

(Hajisaaid, 2020).

This concludes the discussion on the firm-specific characteristics variables chosen for the study. The next section discusses the systematic literature review. It examines the data and findings of other authors relative to a specified research questions.

3.8 Systematic literature review

This systematic literature review was done to examine past literature's findings, results, and recommendations on the research topic. This segment reviews literature's of firm-specific characteristics on financial performance and working capital management.

In this segment, the study reviews literature both locally and internationally on the effects of firm-specific characteristics on financial performance and working capital management of listed companies. This study used firm size, leverage, operating cycle, and sales growth to proxy firm-specific characteristics as independent variables, while ROA was used to proxy financial performance and the current ratio was used to proxy working capital management as dependent variables. Therefore, only literature from 2015 upward that used these proxies in their studies for either dependent or independent and control variables was considered, and the outcome of their results are highlighted.

3.8.1 Firm size

The study conducted by Jibril *et al.* (2023) examine the effect of firm attribute on financial performance of listed deposit money banks in Nigeria. The study used secondary data extracted from the annual reports and accounts of the sampled money deposit banks in Nigeria, for the period of 11 years (2011-2021). The study used three techniques of data analysis, namely descriptive statistics, correlation and multiple regression using Stata version 14. The findings of the study revealed a negative and insignificant relationship

between firm size and financial performance. The study recommends that the debt obtained from outsiders by listed deposit money banks should be managed more effectively in order to drive positive financial performance, and management of listed deposit money banks should increase their firm size through expansion as this will improve the financial performance.

The research undertaken by Wosti and Pradhan (2023) investigate the effect of firm specific factors and reinsurance on the performance of Nepalese insurance companies. The study used return on assets as the dependent variable, while firm size was used as the independent variable. The study is based on secondary data of 16 insurance companies with 128 observations for the study period from 2014-2021. The data were collected from the annual reports of the selected insurance companies and annual report published by Rastriya Beema Samiti. The regression models are estimated to test the significance and effect of firm specific factors and reinsurance on the performance of Nepalese insurance companies. The study showed that firm size has a negative impact on return on assets. It means that increase in firm size leads to decrease in return on asset.

The research work examined by Jimoh and Attah (2022) on the influence of firm-specific factors on financial performance of listed agricultural firms in Nigeria. In the study, firm size was used as the independent variable while return on asset was used to proxy financial performance as the dependent variable. Data were collected from annual reports of the five (5) listed firms in the sector for eleven years from 2010 to 2020. The data for the study were analysed with static panel data regression approach. The results indicate that firm size has significantly negative effect on return on asset at 5% level of significance. The study concluded that the listed agricultural firms utilised their assets efficiently. The study recommended that the managements of agricultural companies in Nigeria should ensure that the firms are not overcapitalised in terms of investment in assets in order to boost both the scale efficiency and profitability of the firms.

In the study undertaken by Girma (2022) examined the impact of firm-specific factors on the financial performance of insurance industry in Ethiopia, which covers a 10-year panel study from 2008 to 2017 based on data extracted from the financial statements of nine insurance companies. Data was collected from secondary source, and descriptive research design was used for this study. Nine insurance company selected as a sample based on judgmental sampling technique and employed the pooled ordinary least square regression methods to figure out the relationship between the explanatory variables and the financial performance of the insurance firm in Ethiopia. The results obtained from the regression analysis shows that firm size has a statistically significant and positive effect on the financial performance of the insurance companies. Finally, this study results recommends to insurance managers to give careful attention on firm specific variables to improve the financial performance of the business.

The research work conducted by Dahmash *et al.* (2021) investigated the effect of firm size on the profitability of all listed corporate firms in Jordan. The study used a sample of 1663 observations of firms listed on the Amman Stock Exchange for the period 2011–2018. Unbalanced panel data (time series and cross-sectional) was used in the study for regression analysis using a static model. Results show that there is a significant positive effect of firm size on profitability. The study recommends that corporate management should consider the most positive effects of firm size on ROA and minimise the less productive fixed assets by relying more on internally generated funds.

In their study, Cheong and Hoang (2021) examined the impact of firm-specific factors on corporate profitability in Singapore and Hong Kong before, during, and after the global financial crisis. The study regresses the pooled sample of each market from 1998 to 2018. The sample is further divided into three sub-samples covering three economic periods: The pre-crisis (1998–2006), crisis (2007–2009), and post-crisis (2010–2018) periods. The study used firm size as proxy for firm-specific characteristics as the explanatory variable, while return on asset was used as proxy to measure profitability as the dependent variable. Two generalised systemic methods were used to analyse the data: The pooled sample method and the pre-crisis, crisis, and post-crisis period sample method. The result

of the pooled study shows that firm size is a significant predictor of financial performance in Singapore and Hong Kong. The results of the study also show that firm size has a strong relationship with firm performance in all three sub-period samples in both countries. This means that larger firms have more resources to weather the storm of the financial crisis.

According to Bobenic *et al.* (2020) who conducted a study to evaluate the influence of firm-specific factors on the performance of firms operating in the Slovak metallurgical industry. The study used firm size as exogenous variable, while performance was used as an endogenous variable proxy by ROA. In the study, a secondary method of data collection was used. The study used 48 firms as the sample size for the period 2009–2017. In the study, the data analysis was based on panel regression models, in which a fixed effect model was chosen. The findings of the study revealed that firm size has no significant impact on firms' performance.

In the study of Mohsin *et al.* (2019), the researchers analysed the effects of working capital management on the performance of non-financial firms in Pakistan. The study used firm size as determinant of working capital management of non-financial firms in Pakistan. ROA was the endogenous variable used for the study. The study used panel data (multiple regression), where a fixed effect model was used to analyse data from the financial statements of 280 non-financial firms listed on the Pakistan Stock Exchange for the period 2000–2016. The findings of the study revealed that firm size has a positive significant relationship with ROA of non-financial firms enlisted in Pakistan.

The research conducted by Dioha *et al.* (2018) examined the effect of firm-specific characteristics on the profitability of listed consumer goods companies in Nigeria. In their study, the authors used profitability as the dependent variable, while firm size was used as the independent variable. The study used 18 listed consumer goods companies as its study sample for the period 2011–2016 out of the 22 listed consumer goods companies for the study population as of December 31, 2016. The study used multiple regression techniques as a tool for data analysis, in which panel data (fixed and random effects

models) were utilised to examine the effect of firm-specific characteristics on profitability. The authors used secondary data obtained from the financial statements of the listed companies as their method of data collection. The results of the study show that firm size has significant effects on the profitability of listed consumer goods companies in Nigeria. The authors recommend that consumer goods companies in Nigeria conduct careful evaluations and consider firm-specific characteristics that impact the profits of a company significantly before making major business decisions in order to improve the company's profitability.

According to Abubakar *et al.* (2018), the researchers conducted a study to examine the effect of firms' characteristics on the financial performance of listed insurance companies in Nigeria. The study used all insurance companies quoted on the NSE as its sample size, and a secondary source of data collection was used, where data was extracted from the annual reports and accounts of all the listed insurance companies in Nigeria for the period 2007–2016. Robust regression analysis was used to test the hypothesis at the 1% level of significance in the study. Firm size was the variable used to proxy firm characteristics as independent variable, while return on equity was used to measure financial performance as the dependent variable for the study. The findings of the study showed that firm size was found to have a significant positive impact on the financial performance of listed insurance companies in Nigeria. This shows that the size of a company's assets is a determinant of the company's performance. Taking the above findings into consideration, the study therefore recommended that insurance companies convert a significant part of their cash and cash equivalents into productive assets that can improve their financial performance.

The study conducted by Ketema (2018), the researcher examined the impact of working capital management on a firm's performance with the aim of investigating the profitability of large taxpayer-funded printing firms in Addis Ababa, Ethiopia. The study used ROA as a proxy for the firm's performance as the dependent variable, while firm size was used as independent variable. The study used secondary data as a method of data collection, and data was collected from the annual financial statements of nine printing firms listed under

the large taxpayer printing firms in Addis Ababa, Ethiopia, for the period 2011–2015. The data was analysed using descriptive and regression analysis methods. The findings of the study show that firm size has an insignificant negative impact on firms' performance.

Based on the study by Kazeem (2015), the researcher conducted an investigation on the impact of firm-specific characteristics on the financial performance of listed insurance firms in Nigeria. The study used financial performance as a dependent variable proxy for ROA, while firm size was used as the independent variable in the study. A total of 30 listed insurance firms were used as the population of the study, while 12 of the listed insurance firms were selected to form the sample size for the period 2006–2013. Multiple regression was used as a tool for analysis, and the data was analysed using STATA 10. The study adopted panel data techniques (fixed and random effects models) to investigate the impact of firm-specific characteristics on financial performance; the random effect model was confirmed to be more appropriate by the Hausman specification test. Secondary data was used as the method of data collection in the study. The results of the study show that firm size is the most important determinants of financial performance. The findings also show that firm size negatively relate to the financial performance of listed insurance firms in Nigeria. The study recommends that the companies conduct a careful evaluation and take into consideration firm-specific characteristics that influence the financial performance of the company, before making any major business decisions, as this will go a long way towards improving their financial performance.

In the year 2015, Tingbani investigated the relationship between working capital management and the profitability of UK firms. The study used panel data, which was sourced from the annual financial reports of 225 listed firms on the London Stock Exchange over the period 2001–2011. The study used ROA to measure profitability as the dependent variable, while firm size was used as control variable. The results of the study show that firm size has a statistically significant effect on the profitability of firms in the UK. The study concluded that firms in the UK can maximise the benefits and minimise the cost of investment in working capital by aligning their working capital management

policies with their environment. This can also be achieved by arranging their resources internally to support such alignment, as any misalignment could significantly affect the firms' performance. The study recommended that policymakers match organisational resources with opportunities and threats in the general business environment to improve their financial performance.

According to Yahaya and Bala (2015), the researchers examined the effect of working capital management on deposit money banks in Nigeria. The study used panel data, which was extracted from the annual reports and accounts of the firms for the period 2007–2013. ROA was used to proxy financial performance as the dependent variable, while firm size was used as a control variable for the study. The results of the analysis revealed that firm size has no significant influence on the performance of listed deposit money banks in Nigeria. The study recommended that the management of the listed deposit money banks in Nigeria should pay more attention to their firm size in order to maintain a positive impact on the performance of the listed companies.

Most of the reviewed studies used three theories majorly- agency theory, signaling theory and resourced based view theory to underpin their studies. Firstly, agency theory posits that bigger companies are more likely to encounter significant agency conflicts as a result of the division between ownership and control (Chen *et al.*, 2021). As companies expand, there is a higher probability of encountering managerial agency issues, which may result in inefficiencies and less-than-optimal financial performance (Utami, 2023). Major companies may have difficulties in harmonising the objectives of executives and shareholders, which may have an effect on their management of working capital and overall financial performance (Banerjee & Deb, 2023). Secondly signaling theory posits that the size of a firm can act as an indicator of its financial robustness and stability. According to Bhattacharyya *et al.*, (2023), the perception of larger companies as more resilient in the face of economic difficulties which might strengthen their ability to get external funding and improve their management of working capital. An increased magnitude may convey to stakeholders that the company is more capable of managing financial uncertainty, which might ultimately result in enhanced financial performance

(Cardoni *et al.*, 2022). Lastly, the resource-based view theory focuses on the significance of unique resources and skills possessed by a corporation in defining its competitive advantage and, therefore, its financial success (Nayak *et al.*, 2022). More sizable corporations may possess enhanced access to resources such as financial capital, proficient workers, and cutting-edge technology. Based on Hatane *et al.*, (2022), the presence of enough resources may have a favourable effect on both financial performance and the management of working capital. Larger companies has the capacity to use their size in order to achieve economies of scale and scope, which may enhance the efficiency of their operations (Mauler *et al.*, 2021).

3.8.2 Leverage

The study of Aribaba *et al.* (2022) examined the effect of firm characteristics on the financial performance of Nigerian-listed oil and gas companies. The information was obtained from the indices report of twelve (12) oil and gas companies listed on the Nigerian exchange group between the periods 2015-2019. The data collected were analysed using the pool and cross-sectional data. Descriptive statistics were used to examine the characterisation of variables while the pooled least square technique was used to investigate the empirical relationship of the variables. The regression result shows that about 69% of the variation in financial performance is explained by the independent variable of leverage. The findings revealed that leverage showed a positive relationship on the financial performance of listed oil and gas companies in Nigeria. Based on these findings, the study recommends that businesses adopt a culture of capitalising and reporting all expenditures on their products.

The study undertaken by Chasha *et al.* (2022), appraises the linkage between working capital management and financial performance in Kenya with a keen interest on small and medium enterprises. The study based its analysis on the desk review of the literature surrounding the stated subject area. One of the observations made in the study was that poor working capital management can lead to collapse of even the most profitable corporations. The literature analysed shows that, there is a close connection between working capital management and profitability. Also, the analysed literature shows that

leverage is an important factor which positively impact or form part of working capital management.

In the year 2020, Kartiningsih and Daryanto analysed the effect of firm characteristics on the profitability of food and beverage companies listed on the Indonesian Stock Exchange. A secondary method of data collection was used in the study to collect data from the audited financial statements and annual reports of 12 companies listed on the Indonesian Stock Exchange for the period 2014–2018 and analysed it using descriptive statistics, Microsoft Excel, and SPSS software. The study used leverage as an independent variable and profitability as a dependent variable. Multiple linear regression analysis was employed in the study to observe the correlation and effect of dependent and independent variable. The findings of the study revealed that leverage has a significant and positive effect on profitability, which made the hypotheses of the study acceptable.

In a study performed by Suseno (2020), the researcher investigated the influence of company characteristics on the financial performance of consumer goods firms in Indonesia. The study used purposive sampling techniques to sample 17 consumer goods companies that have had positive performance on the Indonesian Stock Exchange. Secondary sources of data collection were used in the study, and data was collected from the annual financial statements of the 17 selected consumer goods companies for the period 2012–2018. The study used return on asset to measure financial performance as dependent variable, while leverage was used as proxy variable for the company's characteristics as independent variable. Multiple regression analysis was used in the study to analyse the collected data, and findings revealed that leverage has a negative and significant effect on financial performance. The study concludes that one of the company's significant characteristics is its debt level, meaning that as the company's debt increases, its performance decreases.

The study of Okoye *et al.* (2020) investigated the impact of working capital management on the performance of selected companies listed on the NSE. The study used panel data, and data was collected from the company's financial reports and African financial

websites of 40 firms from the consumer and industrial goods sectors of the economy for the period 2006–2015. ROA was used as a proxy for a firm's performance as the endogenous variable, while leverage was used as control variable of the study. Findings of the study indicated that leverage has a significant impact on the financial performance of the consumer goods sector listed on the NSE. The study concludes that leverage has a significant impact on the performance of firms in the consumer goods sector of the Nigerian economy.

In the year 2019, Akuno and Kariuki conducted a study to examine the effect of firm-specific characteristics on the financial performance of listed energy and petroleum firms in Kenya. Leverage was used as the independent variable in this study, while ROA was used as the dependent variable. The study used all companies in the petroleum and energy industries listed on the Nairobi Stock Exchange for the period 2010–2017 as its sample size. The study used secondary data as a source of data collection. The study used descriptive statistics to test the relationship between firm-specific characteristics and the financial performance of listed companies, while the multi-variant regression analysis, was used to analyse the collected data. The results show that leverage statistically and significantly correlate with financial performance. Also, the coefficients of leverage was positively related to the company's financial performance. The researcher recommended that companies increase their assets to influence their competitive power. The study also recommended the use of proportionate debt financing in relation to total capital financing.

In the 2018, Nyamiobo *et al.* 2018 examined the effect of firm-specific characteristics on the financial performance of listed firms at the Nairobi Securities Exchange. The objective of the study was to establish the relationship between the independent variable (financial leverage) and the financial performance (dependent variable) of companies listed at the Nairobi Securities Exchange. The study was designed to use quantitative research methods to utilise data collected from the companies listed on the Nairobi Securities Exchange. Multiple linear regression analysis was employed in the study to achieve the aim of the study. The study used primary data, and questionnaires were issued as the method of data collection from finance officers of companies listed on the Nairobi

Securities Exchange. A total of 237 participants were used as the study population, while 172 participants were used as the study's sample size. Descriptive and inferential statistics were used to analyse the collected data, and the analysis was carried out with the help of statistical packages for social science (SPSS) and MS-Excel. Findings from the study revealed that leverage contribute 68.8% to the total variability in financial performance. From the findings, the study concludes that firm-specific characteristics have a direct effect on the financial performance of companies listed on the Nairobi Securities Exchange. Finally, the study recommends that policymakers and other stakeholders in the institutions under study should focus on the discussed firm-specific characteristics, as it was found to have a significant effect on the financial performance of listed companies in Kenya.

In a study performed by Egbunike and Okerekeoti (2018), the researcher explored the effect of firms' characteristics and macroeconomic factors on the financial performance of quoted manufacturing firms in Nigeria. The independent variable used in the study was leverage which is an internal factors (firms' characteristics), while financial performance was used as the dependent variable, measured as ROA. The study used all the firms in the consumer goods sector listed on the NSE website in the year 2017, which were 21 at that time. Secondary sources of data were employed, which were extracted from the annual financial reports, such as the statement of comprehensive income and the statement of financial position of the selected companies for the period 2011–2017. The multiple linear regression technique was used to understand the relationships between the dependent variable and the independent variable, and the results revealed that leverage show a significant effect on the ROA of quoted manufacturing firms in Nigeria. The study shows some practical implications for regulators and policymakers in formulating policy decisions, and managers may also better understand the interplay between firm-specific characteristics and the profitability of companies.

In the study performed by Lawal (2017), the researcher examined the impact of working capital management on the profitability of conglomerate firms listed on the NSE. Six conglomerate companies listed on the floor of the NSE as of 31 December 2015 were

used as the sample size for the study. The study used secondary sources as a method of data collection, and data was extracted from the audited financial statements of the listed conglomerate firms for the period 2006–2015. Panel data multiple regression analysis was used as the tool of analysis since, to analyse the extracted data, the data used are cross-sectional and time series. ROA and ROE were used to measure profitability as dependent variables, while leverage was used as control variable for the study. The study based its decisions on ROA because it was discovered that ROA is a better performance proxy than return on equity, because return on equity is a component of ROA. The findings of the study revealed that leverage has a significant negative impact on the ROA of listed conglomerate firms in Nigeria. The findings implied that restrictiveness in the trade credit policy by listed firms' management to its customers with less time to make payments will improve the profitability of the listed conglomerate firms.

According to Tahir (2016), the researcher conducted a study on the impact of working capital management on firms' performance in the manufacturing sectors of Pakistan. The study investigates the relationship between working capital management components and the performance of the firms by using panel data analysis and the GMM, as well as the ANOVA test, to explore any differences across sectors in Pakistan. Secondary sources of data collection were used in this study, and data was extracted from 294 manufacturing firms listed on the Karachi Stock Exchange for the period 2001–2012. ROA was used as the dependent variable for firms' performance measures. Also in the study, leverage was used as control variable. The results revealed that leverage form significant positive determinants on a firm's performance in Pakistan. The study concludes that working capital measures have a significant role in a firm's performance and that there is a difference in their effect on a sectorial basis.

According to Qian (2016), the researcher investigated the main factors that impact the working capital practices of some listed firms in China and their effect on firms' performance. The study used working capital management as the dependent variables, while leverage was used as independent variable. The study used a sample of more than 2000 listed companies for the period 2010 to 2014. In the study, it was discovered that

leverage has a significant positive impact on working capital management. The results suggest that companies with longer-period working capital management prefer to hold more leverage. This means that companies with high-level working capital management will, at the same time, have high leverage. This is probably a special condition of the emerging markets, in which many companies want to increase their scale to achieve more profits.

Based on the study by Tsagem *et al.* (2015), the authors examined the impact of working capital management on the profitability of small and medium-sized entities in Nigeria. The study employed panel data regression analysis, using secondary data by extracting data from the financial reports of 47 samples of registered small and medium enterprises (SMEs) in the North-West geopolitical zone of Nigeria for the period 2008–2012, obtained from the Corporate Affairs Commission of Nigeria, and giving a total of 235 firm-year observations. The study used leverage as control variable, while profitability was used as the dependent variable measured by gross operating profit. Findings of the study revealed that the association between leverage and profitability is found to be positive and significant, indicating that as debt increase, SMEs' profitability also increases. The study recommends that SME owners and managers ought to rely on internally generated funds, retained earnings, and trade credit to finance their operations.

The majority of the reviewed studies also used three theories majorly- trade-off theory, system theory, and the pecking order theory. The trade-off approach suggests that companies must make a decision between the tax benefits of borrowing money and the potential drawbacks of financial difficulties (Agyei *et al.*, 2020). It implies that there exists an ideal amount of leverage that maximises the tax benefit gained from interest payments, while avoiding undue financial risk for the company. Greater leverage may result in heightened financial risk, which can adversely affect financial performance by increasing interest expenditures (Kalash, 2021). Increased leverage may limit liquidity and hinder the firm's capacity to efficiently handle short-term assets and obligations, so impacting working capital management (Seth *et al.*, 2020). On the other hand, the system theory

views companies as intricate systems with interrelated components. Modifications in leverage may have widespread impacts on several aspects of the organisation. According to Wetzel and Hofmann, (2019), increased leverage adds additional complexities and interdependencies within the financial system, which impact the allocation of resources, notably those pertaining to working capital. The systemic perspective highlights that changes in leverage may have a domino impact on financial performance and the management of working capital, as the organisation adjusts to the new financial framework (Alaeddini *et al.*, 2022). Furthermore, pecking order theory posits that companies have a preference for using internal funding first, followed by debt, and finally equity (Agyei *et al.*, 2020). Companies may turn to borrowing when they do not have enough internal money. The theory posits that the selection of funding sources has an impact on financial success. Regarding the administration of working capital, the pecking order theory proposes that companies may give priority to using internal funds or debt rather than external equity (Jabbouri *et al.*, 2023). This preference influences their approach to handling short-term assets and liabilities, as they follow a certain sequence of financing.

3.8.3 Operating cycle

The study conducted by Ehiedu and Imoagwu (2022) examined the analysis of firm specific determinants of profitability of listed oil and gas firms in Nigeria between the periods of 2011-2020. The study made use of secondary data which was sourced from the annual reports and accounts of the various 10 oil and gas firms for the measures of firm specific determinants such as operating cycle in relation to profitability proxy with return on assets. Descriptive statistics and the correlation analysis were used to determine the nature of relationship between the independent and dependent variables. In view of the hypothesis formulated for this research, the method of data analysis chosen was a multiple regression analysis using E-view 9.0 software. The findings revealed that operating cycle has significant relationship on return on asset. The study finally conclude that there is a significant relationship between firm specific determinants and the profitability of listed oil and gas firms in Nigeria.

The research work of Gooneratne and Jayasinghe (2022) investigated the determining factors of working capital requirements in the Sri Lankan context. The study was conducted using secondary data manually collected from a sample of 37 firms listed on the Colombo Stock Exchange over a six-year period from 2014 to 2019. The study used working capital ratio to proxy working capital requirement as the dependent variable, whereas firm-specific determinants were taken as the independent variables. The study used operating cycle as firm-specific determinants. The Statistical Package for the Social Sciences (SPSS) was used to carry out the Ordinary Least Squares (OLS) regression method, and the findings indicated that operating cycle has a significant relationship with the working capital requirements. It was concluded in the study that operating cycle is the most influential determinants of working capital requirements amongst the factors considered, and also that firm-specific variables are crucial in determining working capital requirements in the Sri Lankan context.

In the year 2019, Moussa analyse and identify key factors affecting working capital behavior of companies listed on the Egyptian stock exchange. The study used working capital requirement and cash conversion cycle to proxy working capital behavior as the dependent variables, while operating cycle was used as the independent variable for the study. Panel data analysis for 68 listed Egyptian companies for the period 2000-2010 were employed in the study. The results from the study showed that operating cycle affect working capital behavior. This study provides financial managers with a better understanding of the impact of different internal factors on working capital behavior in an emerging market such as Egypt's.

The study performed by Onaolapo and Kajola (2015), the authors examined the determinants of working capital management of 30 non-financial firms listed on the NSE for the period 2004–2011. Panel data was employed, and ordinary least squares was used as an estimation technique in the study. Operating cycle was the variable used as factor that determine working capital management. The results of the study revealed that operating cycle is a significant factor that determine the firms' working capital management for the period under study. This implies that financial managers should take

cognisance of this factor whenever they want to develop and achieve optimum working capital levels for their companies.

The reviewed literatures used two theories majorly to underpin their studies, these are - cash conversion cycle theory and the trade credit theory. The Cash Conversion Cycle (CCC) theory is a financial measure that quantifies the duration it takes for a firm to transform its investment in inventory and other resources into cash generated from sales. This spans the whole operating cycle, which includes the duration for which inventory is stored, the duration for which accounts receivable are outstanding, and the duration for which accounts payable are outstanding (Sathyamoorthi *et al.*, 2023). A lower CCC is often linked to enhanced working capital management, since it signifies the company's ability to swiftly transform its resources into cash. A decreased CCC may have a favourable effect on financial performance by enhancing liquidity, reducing the need for external funding, and minimising expenses linked to maintaining excessive inventory or waiting for receivables to be collected (Banerjee & Guha Deb, 2023). According to Kisanyanya, (2020), effective management of working capital, as indicated by a favourable CCC, may lead to increased profitability and overall financial well-being. Furthermore, the trade credit theory specifically examines the strategic utilisation of trade credit, which refers to the credit provided to a firm by its suppliers (Wang *et al.*, 2022). The operating cycle impacts the dynamics of trade credit by including discussions between the company and its suppliers over payment conditions. Based on Phuong and Hung, (2020), prolonging the operating cycle might result in more advantageous trade credit conditions, which could affect the firm's capacity to efficiently manage working capital. Efficiently negotiating and managing trade credit throughout the operating cycle may have a favourable effect on financial performance (Lin & Qiao, 2020). Extended payment terms from suppliers may enhance the company's liquidity, hence reducing the need for short-term borrowing. Nevertheless, the effect on financial performance is contingent upon achieving an optimal equilibrium to prevent any detrimental effects on supplier relationships.

3.8.4 Sales growth

In a study undertaken by Olayiwola (2022) the researcher examined the effects of firm specific variables on firm financial performance in the Nigerian manufacturing sector. Ex-post facto research design and secondary data were utilised in the study. The variable used in the study for firm specific characteristics is sales growth, while firm performance was measured by return on assets. Data were sourced from annual reports of twenty (20) manufacturing companies from 2008 to 2017. Pooled ordinary least square regression analysis was employed to ascertain the effects of sales growth on return on asset at 5% level of significance. Findings from the study showed that sales growth has positive significant influence on return on asset. The study concluded that firm specific variables exerted significance influence on the financial performance of the sampled companies and recommended that companies should develop policies aimed at promoting and improving firm characteristics.

In the year 2022, Tjandra *et al.* analyse and identify determinants of working capital management of manufacturing firms listed on Indonesia and the Philippines stock exchanges. The study employed panel data with the final sample for Indonesia was 630 years of observation, while for the Philippines, the sample used was 210 years of observation. The study results in the Indonesian sample show that sales growth has a significant positive effect on working capital. In comparison, the results in the Philippines sample show that sales growth has no effect on working capital. This study concludes that for a firms decision makers, the study can be used as a reference in making decisions related to working capital management. Bad decision making in determining the amount of working capital may lead to high capital costs and financial distress.

In the year 2020, Efuntade and Akinola examine the impact of firm characteristics on the financial performance of quoted manufacturing firms in Nigeria. Descriptive and cross-sectional research design were adopted to investigate the relationship between variables of firm characteristics and financial performance of quoted manufacturing firms in Nigeria over a period of 14 years. Secondary data were obtained from annual reports of five selected quoted manufacturing firms. Panel least square regression model was used to

test the formulated hypothesis. Findings of the study showed that sales growth strongly has impact on the financial performance of manufacturing firms in Nigeria measured by return on assets. The study concludes that the explanatory variable of sales growth, significantly associated with return on asset. The study recommends that, the managements of manufacturing companies should find ways to improve and acquire the optimal utilisation of their assets, while making maximum use of their resources during the production process and distribution of finished products as this would help them in improving their profits.

The study undertaken by Naa Amua Doddo *et al.* (2020) establish the determinants of a firm's performance in 15 non-financial Ghanaian companies listed on the Ghanaian Stock Exchange for the period 2008–2017, and data was collected from the annual reports of those companies. The study used ROA as the dependent variable, while the independent variable used was sales growth. The analysis for the study was based on two methods of estimation: the generalised method of moments (GMM) and the ordinary least square (OLS) method. The results revealed that sales growth has a significant and positive influence on the performance of non-financial companies listed in Ghana. The study also underwent a robustness test conducted using the three-stage least squares regression, which indicates similar results to the main findings of the study.

In a study performed by Pham *et al.* (2020), the researchers examined the effect of working capital management factors on the profitability of steel companies listed on the Vietnamese Stock Exchange. The study collected data from the audited financial statements of 20 listed companies for the period 2010–2019. Sales growth was used as the explanatory variables for the study to measure working capital management, while ROA was used as the endogenous variable as a proxy to measure firm profitability. Multiple regression analysis was used to test the results of the study, and findings revealed that sales growth has a positive impact on the profitability of steel companies listed on the Vietnam stock exchange.

The research undertaken by Ajao and Ogieriakhi (2018) investigated the relationship between firm-specific factors and the performance of insurance firms in Nigeria. In the study, data was collected from 12 sampled insurance firms quoted on the NSE for the period 2009–2017. The study used sales growth as the explanatory variable used to measure firm-specific factors, while ROA was used to measure performance as the dependent variable. The panel least squares technique was used to analyse the data collected for the study, and the results show that sales growth was found to be significant but negatively related to performance. This implies that insurance firms with a high growth rate are likely to have poor performance in contrast with those with a low growth rate, which will experience better performance. The study recommends that exogenous factors and other firm-specific factors not used in this study, like underwriting and liquidity, should be examined as they relate to the performance of insurance companies in Nigeria.

The study done by Korent and Orsag in 2018 examines the influence of working capital management on the profitability of Croatian software firms. The impact of the study was examined using descriptive and correlational as well as panel regression analysis for the period of six years, 2008–2013. The study used secondary sources of data collection, as data was obtained from the databases of the Financial Agency and the Croatian Bureau of Statistics. ROA was used to measure profitability as the dependent variable, while sales growth was used as independent variable. The findings of the study revealed that firm-specific characteristics proxy by sales growth significantly affects the profitability of Croatian software firms. Based on the study, it was discovered that the authors failed to identify the sampling techniques used for the study and the statistical software used to analyse the data collected, which are very important aspects in research methodology.

In the year 2016, Ahmed investigated the determinants of working capital management in the real estate sector in Saudi Arabia. The study employed panel data to sample nine real estate firms that are listed on the Saudi Stock Exchange over a period of six years, from 2010 to 2015. The study used the Ordinary Least Squares (OLS) method to study the variation of the explanatory variables on the explained variable. Cash conversion cycle was used to represent working capital management as the dependent variable, and the explanatory variable used in the study is sales growth. The findings of the study

reported that sales growth has a significant positive association with working capital management.

The study conducted by Oseifuah (2016), the researcher analysed the key endogenous (internal) factors influencing working capital management in a sample of five large non-financial firms listed on the Johannesburg Securities Exchange. The study used sales growth as the internal factors affecting working capital management, and the result revealed that sales growth is one of the most important factors influencing working capital management in the sampled firms. In the study, 40% of the sampled firms indicated that sales growth affects working capital management to a very high extent. This implies that the growth of a firm's sales affects its working capital management positively, but when sales are low, it will affect working capital management negatively. Data for the study was collected using a semi-structured questionnaire, covering the period 2003–2012.

The research examined by Rajabi (2016), an empirical analysis was conducted to assess the factors that affect working capital management in Chinese firms that operate in the electronic industry. The data was extracted from the DataStream, which is one of the best databases of global financial data. The data was sourced from the financial statements of 98 Chinese companies that have operated in the electronic industry over the period 2005–2014, making 980 firms' years of observation. The study used working capital management as a dependent variable, measured by the cash conversion cycle (CCC), while sales growth was used as independent variable. The study used descriptive analysis to check the overall influence of the variable and also used linear model regression analysis. The findings of the study showed that sales growth has no significant connection with working capital management. This shows that the nexus between sales growth and working capital management is ambiguous.

Based on the study by Takon and Atseye (2015), the researcher investigated the effect of working capital management on the profitability of Nigerian listed companies by utilising panel data, pooled ordinary least squares regression, and a fixed-effects model with a multicollinearity test. The study collated data from annual reports and statements of

accounts of a sample of 46 firms quoted on the NSE, the Securities and Exchange Commission, and the NSE Fact Book for the period 2000–2009. The study used ROA to proxy financial performance as the dependent variable, while sales growth was used as control variable for the study. The results of the study show that sales growth has a positive correlation with the profitability of listed companies in Nigeria. The study recommends that the managers of the organisation concentrate on the proper management of the financial components and keep them at optimal levels, as this will go a long way to enhancing profitability and creating value for their companies.

Most reviewed literatures above used three theories – pecking order theory, trade credit theory and growth life cycle theory to underpin their studies. The pecking order theory posits that companies have a structured ranking of preferred sources of finance, with internal funds being the first option, followed by debt, and finally equity (Yıldırım & Çelik, 2021). As a company undergoes sales expansion, it may need more money to sustain heightened requirements for working capital. According to this hypothesis, companies may give more importance to using their own profits rather than seeking external funding. When external funding is required, they may have a preference for borrowing money rather than issuing shares. In the words of Wang *et al.*, (2021), the pecking order theory posits that an increase in sales growth might result in a greater need for working capital financing, prompting organisations to prioritise the utilisation of internal cash and loans to fulfil these demands. Efficient implementation of the hierarchy may enhance financial performance by reducing expenses related to external funding, such as the issuance of additional shares. On the other hand, the trade credit theory examines the deliberate utilisation of trade credit, which refers to the credit provided by suppliers, as a means of obtaining short-term funding (Wang *et al.*, 2022). As a business experiences an increase in sales, it has the opportunity to engage in negotiations with suppliers to secure advantageous trade credit terms. These conditions may have a significant impact on the firm's capacity to effectively manage its working capital (Sawarni *et al.*, 2023). Effectively handling and overseeing trade credit may have a positive influence on financial performance by improving liquidity. According to Al-Hadi & Al-Abri, (2022), positive trade credit conditions enable a firm to postpone payments to suppliers, therefore offering

supplementary short-term finance. The deliberate use of trade credit is in accordance with the increase in sales, therefore enhancing the overall financial performance. Lastly, the growth life cycle theory posits that firms have various stages of development, maturity, and decline. During the expansion period, companies often see a surge in sales, resulting in heightened demands for working cash (Pham & Pham, 2020). As sales increase, companies may be required to allocate resources towards inventories, receivables, and other working capital elements in order to sustain the expanding company. The growth life cycle theory posits that sales growth is an inherent aspect of a company's development, and effective management of working capital is vital throughout this period (Akbar *et al.*, 2021). Companies that successfully synchronise their working capital management strategies with the requirements of sales expansion may improve financial performance by guaranteeing enough liquidity to meet operational requirements.

The preceding paragraphs conclude the exploration of the systematic literature review concerning the impact of firm-specific characteristics on both financial performance and working capital management. The next segment provides a summary of the key findings from the systematic literature studies.

3.9 Summary of systematic literature studies

The review of literature revealed that many studies examined firm-specific characteristics and financial performance in different countries, including Nigeria. Jibril *et al.* (2023) reported that firm size and leverage have negative and insignificant impact on financial performance. Wosti and Pradhan (2023) in their study observed that firm size has negative impact on financial performance. Ehiedu and Imoagwu (2022) reported that leverage and operating cycle significantly impact financial performance, while firm size and sales growth insignificantly impact financial performance. Olayiwola (2022) established that sales growth, firm size and leverage have positive significant impact on return on asset. Girma (2022) also reported that firm size has positive significant impact on return on asset, while leverage has negative and significant impact on return on asset. Efuntade and Akinola (2020) revealed that firm size, leverage, and sales growth have positive significant impact on financial performance. The study performance by Suseno (2020), the researcher used ROA, return on equity, and net profit margin to measure

financial performance. The independent variables included firm size and leverage. The study uncovered that there is a significant influence between firm-specific characteristics and a company's financial performance. Cheong and Hoang (2021) discovered that firm size and leverage are significant predictors of financial performance, while sales growth has an insignificant relationship with financial performance.

Also, the review of the extant literature revealed that few studies examined firm-specific characteristics and working capital management. Tjandra *et al.* (2022) reported that sales growth has positive and significant impact on working capital management, leverage has negative significant impact on working capital management, while firm size and operating cycle have insignificant impact on working capital management. Chasha *et al.* (2022) discovered that firm size, leverage and other financial ratios impact working capital management. Moussa (2019) reported that operating cycle, sales growth, firm size and leverage impact working capital management. Oseifuah (2016) revealed that sales growth is one of the most important factors influencing working capital management. In the study, 40% of the sampled firms indicated that sales growth affects working capital management to a very high extent. Qian (2016) discovered that leverage and firm size have a significant positive impact on working capital management, while sales growth is negatively related to working capital management. Rajabi (2016) found out that there is a negative relationship between firm size and working capital management, while sales growth and leverage have no significant connection with working capital management. Onaolapo and Kajola (2015) stated that firm size, leverage, and operating cycle are the significant factors that determine firms' working capital management, while sales growth does not determine firms' working capital management.

3.10 Literature gap

In addition to methodological discrepancies and varying definitions, the literature on firm-specific characteristics and their influence on financial performance and working capital management also faces a significant lack of focus on dynamic elements and industry-specific intricacies. Several studies use static methodologies, disregarding the dynamic character of companies as they change over time. Moreover, a substantial fraction of

research concentrates on certain sectors or geographical areas, so limiting the applicability of their results. It is crucial to have a wider range of participants from different sectors and places in order to guarantee that research findings may be applied to a larger business environment. Expanding the breadth of this study will allow researchers to find shared trends and differences in the connection between certain features of companies and their financial performance and management of working capital. This would contribute to a stronger and more universally applicable body of knowledge. To this end, the current research aims to examine the influence of firm-specific characteristics on financial performance and working capital management across three sectors: consumer goods, oil and gas, and the financial sector.

3.11 Chapter summary

This chapter discussed the concept of firm-specific characteristics (internal factors) and how they affect or impact the financial performance and working capital management of a company. This provided an insight into the conceptual framework that was used to organise the whole chapter. The chapter further discussed four firm-specific characteristics (internal factors) chosen for the study that are mostly under the direct control of management and how they impact positively or negatively on the financial performance and working capital management of a company. The systematic literature review of different studies of firm-specific characteristics on financial performance and working capital management and the outcome of their findings were also discussed.

Olayiwola (2022); Ehiedu and Imoagwu (2022); Dahmash *et al.* (2021); Cheong and Hoang (2021); Efuntade and Akinola (2020); Bobenic *et al.* (2020); Kartiningasih and Daryanto (2020); Naa Amua Doddo *et al.* (2020); Okoye *et al.* (2020); Akuno and Kariuki (2019); Dioha *et al.* (2018); Egbunike and Okerekeoti (2018); and Korent and Orsag (2018) reported that firm size, leverage and sales growth have a positive and significant impact on financial performance. While, Wosti and Pradhan (2023); Ajao and Ogieriakhi (2018); Suseno (2020); Akuno and Kariuki (2019); and Ketema (2018) revealed that firm size, leverage and sales growth have negative but significant impact on financial

performance. Lastly, Jibril *et al.* (2023); Ehiedu and Imoagwu (2022) discovered that firm size, leverage and sales growth have insignificant impact on financial performance.

Furthermore, Abdullah *et al.* (2022); Chasha *et al.* (2022); Moussa (2019); Oseifuah (2016); Qian (2016); and Onaolapo and Kajola (2015) stated that sales growth, leverage, firm size and operating cycle have positive and significant impact on working capital management, while Tjandra *et al.* (2022); Rajabi (2016), and Qian (2016) informed that firm size, leverage and sales growth have negative but significant impact on working capital management.

The next chapter present the macroeconomic variables (external factors) and how they impact the financial performance and working capital management of a company. The chapter also give a brief history of the Nigerian Exchange Group (NGX), and the sectors chosen for the study. Their impact on the Nigerian economy were also be discussed.

CHAPTER 4: LITERATURE REVIEW OF MACROECONOMIC VARIABLES ON FINANCIAL PERFORMANCE AND WORKING CAPITAL MANAGEMENT

4.1 Introduction

This chapter reviews the literature on macroeconomic variables, which is the second group of independent variables selected for this study. The impact of these macroeconomic variables on financial performance and working capital management in a company is addressed. This study identified three external factors to proxy macroeconomic variables. These variables are the inflation rate, exchange rate and gross domestic product. The chapter is organised to cover the conceptualisation of the key terms. Therefore, this chapter discusses the concepts of macroeconomic variables and how chosen external factors impact financial performance and working capital management.

4.2 Concept of macroeconomic variables on financial performance and working capital management

In this section, the definition of macroeconomic variables is defined by different authors in the study as the impact on financial performance and working capital management in a company.

The economic condition of a country largely affects the financial performance and working capital management of the companies in that country (Sucipto *et al.* 2022). If the economy performs well, then the company's investors and shareholders expect the company to create value for its stakeholders. According to Nangih *et al.* (2021:13), the sustainability of macroeconomic variables, such as inflation, interest rates, exchange rates, gross domestic product, unemployment rates, and stock market prices serves as a gauge of the economy's performance. The expectation of the company's investors and shareholders in the micro and macro stages of an economy is that all macroeconomic variables might be stable with sustainable business growth (Kola Benson *et al.* 2022:194).

The word "macroeconomics" is derived from the Greek prefix macro, meaning "large" economics. It is a subdivision of economics that deals with the performance, structure, behaviour, and decision-making of the economy as a whole (Egbunike & Okerekeoti, 2018:144).

Table 4.1 lists some of the definitions that various authors used to describe macroeconomic variables.

Table 4.1: Definitions of macroeconomic variables by different authors

Author(s) and year	Definitions
Okunbanjo et al. (2022:78).	Macroeconomic factors refer to those conditions and forces that are external to the company and are beyond the individual business units of the company; but at the same time, the companies have to operate in the macroeconomic environment.
Kibori and Katuse (2016:71).	Macroeconomic variables are variables that control the macroeconomy. These variables include interest rates, inflation, population size, economic output, employment, and unemployment rates.
Kajwang (2022:20)	Macroeconomic variables are factors that are outside the company, but that have an influence on the increase or decrease in the company's performance, either directly or indirectly.
Anshu and Gakhar (2019:261).	Macroeconomic variables are those variables that are relevant to a national economy and affect the overall region of the economy rather than a few selected individuals.
Egbunike and Okerekeoti (2018:145).	The Institute of Chartered Accountants of Nigeria (ICAN) opined that macroeconomic factors can be viewed as a set of factors or conditions that are external to the company, but that can influence the operations of the company. These macroeconomic factors can pose a positive or negative threat to the performance of a company.

Based on these definitions, this study defines macroeconomic variables as those factors that are beyond the control of management. These are external factors in an economy that affect a company, which the management of that company has no power to control. These external factors include inflation, interest rates, exchange rates, unemployment rates, industry size, and gross domestic product. This means that the financial

performance and working capital management of listed companies in Nigeria could be impacted or ascertained using macroeconomic variables (external attributes or factors) as key determinants of a company.

The increase or decrease in financial performance and working capital management of a company can be influenced directly or indirectly by these macroeconomic variables. In developing countries, of which Nigeria is one, the financial performance of a company and its financial position have been dramatically influenced by macroeconomic conditions (Soukhakian & Khodakarami, 2019:3). According to Garcia-Teruel and Martinez-Solano (2007) and Mathuva (2010), cited by Soukhakian & Khodakarami (2019:3), findings also support the issue that macroeconomic factors such as gross domestic product, inflation rate, interest rate, and exchange rate have a significant influence on a company's financial performance and working capital management. It is often argued that financial performance is determined by some fundamental macroeconomic variables, such as the interest rate, gross domestic product, exchange rate, inflation, and money supply, which are closely monitored by the government, businesses, and consumers (Kibori & Katuse, 2016:72).

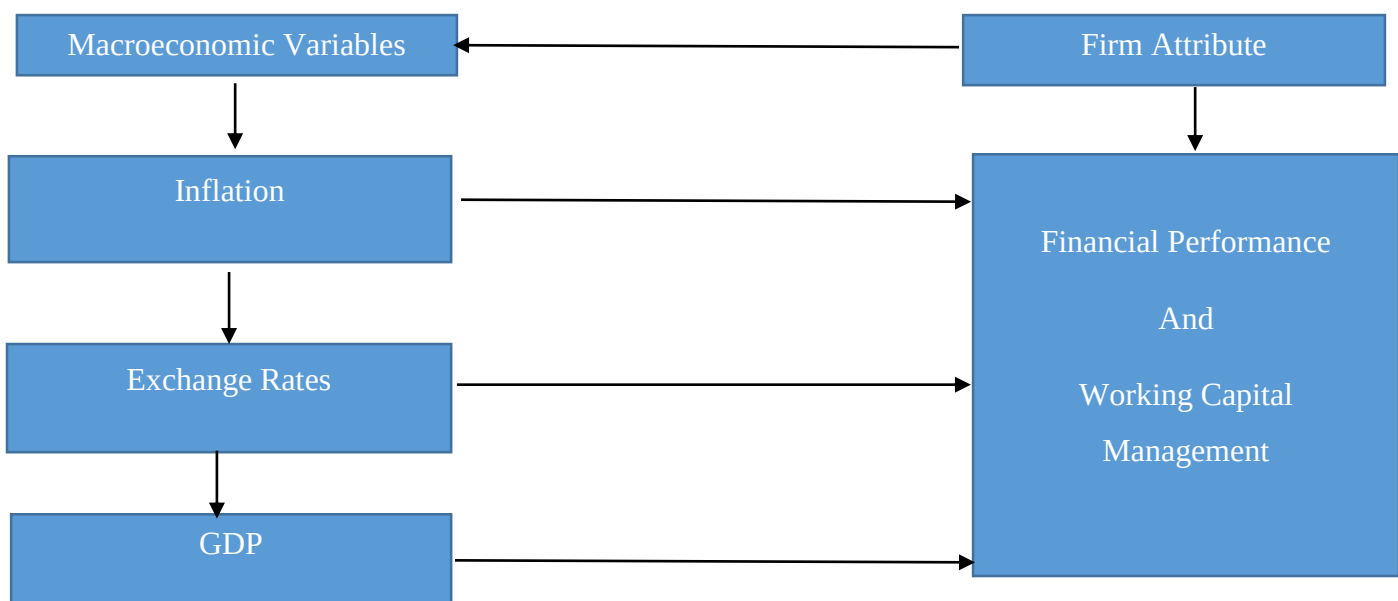
Macroeconomic variables are grouped into three classes: Those related to the general external environment, such as inflation and unemployment rate; those associated with the direction the economy is moving, such as gross domestic product; and those in the financial market conditions, such as interest rates, exchange rates, and stock market returns (Njuguna 2013). According to Shah (2018:1), macroeconomic indicators and variables show the overall strength or weakness of a country's economy. This means that external factors or macroeconomic variables determine the economic position of a country, which in turn, affects or impacts the financial performance and working capital management of a company. According to Obidike and Nduka (2022:86), the most important macroeconomic indicators are gross domestic product, inflation, interest rates, exchange rates, foreign direct investment, unemployment rates, and the money supply.

There are different forms of macroeconomic variables that impact the financial performance and working capital management of listed companies in Nigeria, but the focus of this study is on three external factors as stated in 4.1, the reason being that they are the most important macroeconomic variables the economy depends on because they mostly contribute to the growth of the economic.

4.3 Conceptualisation of key terms

The figure below gives an illustration of the macroeconomic variables that determine the financial performance and working capital management of a company for this study.

Figure 4.1: Macroeconomic variables on financial performance and working capital management



Source: Author design base on literature

In the figure above, the financial performance and working capital management of companies can be assessed at the external levels of the company (that is, outside the company). The external factors refer to how macroeconomic variables affect the financial performance and working capital management of companies. The chapter addresses only inflation, interest rates, exchange rates, gross domestic product, and unemployment, with the reason being that they are the most important macroeconomic variables the economy

depends on. They contribute positively or negatively to the economic growth of any nation, and they also boost a company's financial performance and working capital management by making a gain or loss.

The next paragraph addressed the impact of inflation (an external factor) on the financial performance and working capital management of a company as identified by different authors and the measurement used to measure inflation for this study.

4.4 Inflation financial performance and working capital management

Inflation refers to a rise in the prices of goods and services in an economy over some time. When the general price level rises, each unit of currency buys fewer goods and services (Obaji 2023:5). Egbunike and Okerekeoti (2018:146) defined inflation as a persistent rise in the general level of prices. The inflation rate measures changes in the average price level, based on a price index. According to Karadjova *et al.* (2022:250), inflation can be measured in several ways; however, two commonly used measures are the gross domestic product deflator and a consumer price index indicator. The gross domestic product deflator is a broad index of inflation in the economy, while the consumer price index indicator measures changes in the price level of a broad basket of consumer products.

According to Soukhakian and Khadakarami (2019:3), inflation is an index that provides relevant awareness about the purchasing power of national currencies and measures economic stability. The argument about the impact of inflation on company performance and working capital management can be that inflation increases the price of inputs in production, including raw materials and overhead costs, which can influence the volume of production. Based on this argument, it is logically expected that inflation plays a significant role in influencing a company's financial performance and working capital management (Soukhakian & Khadakarami, 2019:3). Inflation is one of the most pervasively used macroeconomic indicators. This measure shows a persistent increase in the prices of goods and services and a persistent decline in purchasing power. Generally, inflation increases a company's expenditures, while on the other hand, it also

increases the price of goods, which may negatively influence demand (Soukhakian & Khadakarami, 2019:6).

Several studies have been undertaken both locally and globally on the influence of inflation on financial performance and working capital management, and the results are discussed in the next paragraph.

The study of Buyinza (2010), the researcher found a positive and significant relationship between inflation and financial performance. However, Ajayi and Atanda (2012), Kiganda (2014), and Kwakwa (2014), in their studies, found a positive but insignificant relationship between inflation and financial performance. Nguku (2019) and Macharia (2013) discovered a negative relationship between inflation and financial performance. Mueni (2016) and Kungu (2013) found a positive correlation between inflation and financial performance. Osamwonji and Chijuka (2014) and Kanwal and Nadeem (2013), in their studies, found an insignificant negative relationship between inflation and profitability as measured by ROA and return on equity.

Based on Zariyawati *et al.* (2016), the study report that the inflation rate has a significant negative relationship with working capital management, as measured by the cash conversion cycle. This means that a higher inflation rate will, in turn, lead to a shorter CCC, which may be attributable to the cost of inventory that increases during high inflation periods, leading many companies to reduce their short-term investments and extend their working capital. Oseifuah (2016) reports that the inflation rate positively influences working capital management to some extent.

This study defines inflation as the rate of increase in prices over a given period. This means that inflation is the overall increase in the prices of goods and services or the increase in the cost of living in a country. The study used Nigeria's annual inflation rate to measure the impact of inflation on financial performance and working capital management of listed companies in Nigeria and to determine to what extent inflation

impacts financial performance and working capital management of listed companies in Nigeria.

After the discussions about inflation, the study adopts the following abbreviation to measure inflation rates: **Inflation rate (InfR)**.

The next section discussed the impact of the exchange rate on the financial performance and working capital management of a company, as highlighted by different studies, and the measurement used to measure the exchange rate for this study.

4.5 Exchange rate financial performance and working capital management

The exchange rate is the value of one country's currency in terms of another foreign currency (Zahra *et al.* 2023:53). The demand and supply of a country's currency in comparison to the demand and supply of a foreign currency determines its exchange rate (Ilmas *et al.* 2022:123). According to Harvey (2012:1), the exchange rate is defined as the value of two currencies relative to each other. It is the price of one currency expressed in terms of another currency. Murungi's (2014:4) definition of the exchange rate is the price at which the currency of one country can be converted to the currency of another. The exchange rate is the amount of local or home currency required to purchase one unit of a foreign currency, according to Gikombo & Mbugua (2018:85). It affects the relative prices of domestic and foreign goods as well as the foreign demand for local goods. Harahap (2018:3) defined the exchange rate as the quantity of domestic currency required to purchase one unit of foreign currency.

In the studies of Desaro (2012), Macharia (2013), and Kiganda (2014) all found a negative influence between exchange rate and financial performance, as cited by Nguku (2019:30). However, Ongeru (2014), as cited by Mueni (2016:19), Simiyu and Ngile (2015) found a positive and significant influence between exchange rate and profitability proxy as return on asset. Oseifuah (2016:41) reported that exchange rates impact working capital management to a very high extent, which means that the exchange rate has a positive and significant impact on the working capital management of a company.

This study defines the exchange rate as the value by which two currencies are traded for one another, that is, the rate or value at which one currency can purchase another currency. The exchange rate is categorised into two concepts: the real exchange rate and the nominal exchange rate. The real exchange rate is the purchasing power of a currency relative to another at current exchange rate and prices. This is also known as the nominal rate, adjusted for differences in price levels. On the other hand, the nominal exchange rate is the amount of currency one can receive in exchange for another currency. This study used the real exchange rate (Nigeria's annual or official exchange rates) to measure the impact of the exchange rate on financial performance and working capital management of listed companies in Nigeria and also to determine to what extent the exchange rate impacts financial performance and working capital management of listed companies in Nigeria. In this study, the exchange rate of the Nigerian naira (₦) to US dollars (\$) was applied.

After the discussions about exchange rates, the study adopts the following abbreviation to measure exchange rates: **Exchange rate (ExcR)**.

The next section addressed the impact of gross domestic product on the financial performance and working capital management of a company, as identified by different studies, and the measurement used to measure gross domestic product for this study.

4.6 Gross domestic product financial performance and working capital management

According to Juanda *et al.* (2023:188), a country's gross domestic product is the market value of all finished goods and services produced in a country within a specified period, usually one year. It is a gauge of economic recession and recovery, and an economy's general monetary ability to address externalities (Murungi 2014:5). According to Soukhakian and Khadakarami (2019:6), gross domestic product is widely recognised as a comprehensive measure of economic performance. This means that a country's gross domestic product can improve its economic performance when the country is involved in

the production and sale of goods and services rather than buying goods and services produced by other countries.

According to Egbunike and Okerekeoti (2018:147), the researchers define gross domestic product as the total market value of goods and services produced by a country's economy during a specified period. It includes all final goods and services, and those that are produced by the economic agents located in that country, regardless of their own, and which are not resold in any form. Mwangi (2013:6) explained that gross domestic product is the most commonly used macroeconomic indicator to measure total economic activity within an economy; its growth rate reflects the state of the economic cycle. It is used throughout the world as the main measure of output and economic activity (Egbunike & Okerekeoti, 2018:147). According to Ongore and Kusa (2013:240), when there is a decreasing trend in gross domestic product, credit demand decreases, which adversely affects the financial performance of a company. On the other hand, when there is an increasing trend in gross domestic product, credit demand also increases, which positively affects the financial performance of a company. Gross domestic product provides meaningful content about the overall macroeconomic condition of any country and is considered a comprehensive measure of economic performance (Soukhaklan & Khadakarami, 2019:3).

In the study conducted by Trujillo-Ponce (2013), as cited by Egbunike and Okerekeoti (2018:147), Osamwonji and Chijuka (2014:85), and Kungu (2013), as cited by Mueni (2016:20), there was a positive impact between gross domestic product and financial performance/profitability proxy by return on asset and return on equity. Also, Kanwal and Nadeem (2013:186), Simiyu and Ngile (2015:1), and Ongeru (2014) all reported a positive but insignificant impact between gross domestic product and profitability as measured by ROA and return on equity.

The study of Marobhe (2015:112) reports an insignificant relationship between gross domestic product and working capital management proxy by cash conversion cycle; also, Manoori and Muhammad (2012:19) reported a negative relationship between working

capital management proxy by cash conversion cycle and gross domestic product. Salawu and Alao (2014:51), investigated important factors that affect working capital management. In their study, it was reported that gross domestic product was one of the exogenous variables for the study and had a positive relationship with working capital management, which indicates that companies expand their investment in working capital during an economic boom. Oseifuah (2016:41) reports that gross domestic product impacts working capital management to a very high extent, which means that gross domestic product has a positive and significant impact on the working capital management of a company.

This study defines gross domestic product as the final value of the goods and services produced within the geographic boundaries of a country during a specified period, normally one year, which is an important indicator of the economic performance of a country. The study used Nigeria's annual gross domestic product to measure the impact of gross domestic product on financial performance and working capital management of listed companies in Nigeria and also to determine to what extent gross domestic product impacts the financial performance and working capital management of listed companies in Nigeria.

After the discussions about gross domestic product, the study adopts the following abbreviation to measure gross domestic product: **Gross domestic product (GDP)**.

This marks the conclusion of the discussion on the macroeconomic variables chosen for this study. The next section discusses the systematic literature review of past literatures findings, results, and recommendations. The section reviews literatures of macroeconomic variables on financial performance and working capital management.

4.7 Systematic literature review of macroeconomic variables on financial performance and working capital management

In this section, the study reviews the literature on local and international studies of macroeconomic variables' effects on financial performance and working capital

management of listed companies. This study used inflation rate (InfR), exchange rate (ExcR), and GDP to proxy macroeconomic variables as another independent variable, while the chosen proxy on financial performance and working capital management still stands. Therefore, only literature from 2015 upward that used these proxies in their studies for independent, dependent, and control variables was reviewed, and the effect of their results highlighted.

4.7.1 Inflation rate

The research performed by Al Sharif (2023), the study examines the impact of macroeconomic variables on the performance of Islamic banks in Jordan. Inflation rate was used to proxy macroeconomic variables as the independent variable, while return on assets was used to proxy performance as the dependent variable. The study used multiple linear regression analyses of periodic data for Jordanian Islamic banks in Jordan during the period 2007 to 2021. Findings from the study showed a positive correlation between inflation rate and return on asset of Jordanian Islamic banks. The study recommended that the government should use an expansionary fiscal and monetary policy, and foreign investors should use the funds of Islamic banks in financing and investments to improve the performance of Islamic banks.

According to the study conducted by Ogunlade *et al.* (2023), the researchers analyse the influence of working capital management on the financial performance of publicly traded consumer goods firms in Nigeria. The study examined the performance of the listed consumer goods industry during the Covid-19 and the 2015-2017 recession periods, because cash flow was constrained throughout these periods. The study used macroeconomic variables such as inflation rate as control variable to achieve the objectives. The study employs a longitudinal research design to examine a period of 2003 to 2020. Hypotheses were tested using panel data regression. The findings of the study showed that inflation rate has a negative and significant impact on the financial performance of publicly traded consumer goods firms in Nigeria during the covid-19 and the 2015-2017 recession period.

The research work done by Ally (2022), determines the influence of macroeconomic factors on financial performance of commercial banks in Tanzania. Data were collected using secondary source. The study applied descriptive and explanatory research design to describe trend of the inflation rate on return on assets for the period of 10 years from 2010 to 2019. The result showed that the correlation analysis conducted between inflation rate and return on assets reveal a positive relationship of 59.22%. This mean that increase in return on assets result in an increase in inflation rate by 59.22%. The study concluded that inflation rate influence financial performance of commercial banks. The study recommended that the government should continue maintaining the policies that protect commercial banks in case of inflation rate rising for the growth of the economy.

The investigation conducted by Girma (2022) on the influence of macroeconomic factors on the financial performance of insurance industry in Ethiopia. The study spanned a 10-year period from 2008 to 2017 and utilised data from the World Bank database to analyse nine Ethiopian insurance companies. The study used descriptive research design. Pooled ordinary least square regression methods was used to figure out the relationship between the explanatory variable and the financial performance of the insurance firm in Ethiopia. The results obtained from the regression analysis shows that inflation rate has insignificant effect on the financial performance of the insurance companies in Ethiopian.

The research work examined by Gooneratne and Jayasinghe (2022), investigate the determining factors of working capital requirements in the Sri Lankan context. The study was conducted using secondary data manually collected from a sample of 37 firms listed on the Colombo Stock Exchange over a six-year period from 2014 to 2019. The study used working capital ratio to proxy working capital requirement as the dependent variable, whereas macroeconomic determinants were taken as the independent variables. The study used inflation rates as macroeconomic determinant. The Statistical Package for the Social Sciences (SPSS) was used to carry out the Ordinary Least Squares (OLS) regression method, and the findings indicated that inflation rate has no significant association with working capital requirements in the study.

According to Egbunike and Okerekeoti in the year 2018, the researchers investigated the effect of macroeconomic factors on the financial performance of quoted manufacturing firms in Nigeria. The independent variable used in the study is inflation rate which is external factor (macroeconomic variables), while financial performance was used as the dependent variable, measured as ROA. The study used all the firms in the consumer goods sector listed on the NSE website in the year 2017, which were 21 at that time. Secondary sources of data were employed, which were extracted from the statistical bulletin of the Central Bank of Nigeria for economic factors for the period 2011–2017. The multiple linear regression technique was used to understand the relationships between the dependent variable and the independent variable, and the results revealed that inflation rate has a significant effect on the ROA of quoted manufacturing firms in Nigeria. The study has practical implications for regulators and policymakers in formulating policy decisions, and managers may also better understand the interplay between macroeconomic factors and the profitability of firms.

The study conducted by Rajabi (2016), examined an empirical analysis to assess the factors that affect working capital management in Chinese firms that operate in the electronic industry. The data was extracted from the DataStream, which is one of the best databases of global macroeconomic data. The data was sourced from the financial statements of 98 Chinese companies that operate in the electronic industry over the period 2005–2014, making 980 firms' years of observation. The study used working capital management as a dependent variable, measured by the CCC, while inflation rate was used as independent variable. The study used descriptive analysis to check the overall performance of the variable and also used linear model regression analysis. The findings of the study reveal that inflation rate has no significant connection with working capital management. This shows that the relationship between inflation rate and working capital management is complex.

The majority of the reviewed studies used the theory of Purchasing Power Parity (PPP) to underpin their study. According to Vo and Vo, (2022), PPP is an economic theory that establishes a connection between exchange rates and the prices of equivalent baskets

of goods and services in various nations. Over time, the theory of PPP states that exchange rates should adapt in order to balance the prices of certain commodities across countries when measured in a shared currency. This idea has important consequences for firms that operate globally, especially those that handle various currencies (Nakorji *et al.*, 2021). Within the framework of inflation, PPP posits that divergent inflation rates across nations should result in modifications to exchange rates, hence influencing the prices of commodities and services (Adebisi & Jaji, 2023). Businesses involved in international commerce or with operations in many countries are directly impacted by currency fluctuations that are caused by differences in inflation rates, which in turn affect their financial performance. These consequences become apparent in the price of imported products, the dynamics of cash flow, and the tactics for managing total risk. Based on Sameer and Pallavi, (2023), companies that heavily rely on imports may encounter higher expenses for commodities or raw materials as a result of the devaluation of the currency of the exporting nation, which may have a negative influence on their profit margins. Given the circumstances of uncertain currency fluctuations, it is crucial to prioritise efficient management of working capital to maintain liquidity and fulfil financial responsibilities. In order to effectively deal with the effects of currency changes on financial performance, organisations operating in different currency environments must use strong risk management methods, such as hedging procedures (Likitapiwat *et al.*, 2023). These tactics are crucial for maintaining stability in cash flows and safeguarding profit margins.

4.7.2 Exchange rate

In the year 2023, Luitel examines the impact of macroeconomic variable on the profitability of Nepalese commercial banks. The study used return on assets as the dependent variable, while exchange rate was used as the independent variable. The study used secondary data of 16 commercial banks with 128 observations for the period 2014 to 2021. Data were collected from banking and financial statistics published by Nepal Rastra Bank annual reports of the selected commercial banks and reports published by ministry of finance. The study used linear regression model and findings showed that exchange rate has a negative impact on return on assets.

In the study conducted by Majeed (2022), the researcher examine the effect of macroeconomic variables on Iraq stock exchange market performance. The study extracted data on Iraqi's stock market for macroeconomic variables for the period 2005 to 2021. The independent variable used in the study is exchange rate while market capitalisation was used as a proxy for stock market performance as the dependent variable. The result of the study showed that exchange rate has a significant positive effect effect on stock market performance according to the Autoregressive Distributed Lag (ARDL) regression results. The study concluded that the true determinant of the Iraqi stock market's success is exchange rate, which has a major impact.

According to Kola Benson *et al.* (2022), the authors conducted a study to identify the effect of macroeconomic variables on company performance of listed companies in South Africa. The goal was to study the long run and short run effects of macroeconomic volatility on company performance because of the world's recent pandemic experience. Exchange rate was used to proxy macroeconomic variables, while return on assets was used to proxy company performance. The study applied the panel Autoregressive Distributed Lag (ARDL) model on annual panel data from 2010 to 2020 to analyse the short run and long run effects of macroeconomic variables on a company's performance. Findings from the study confirmed that there is a positive and significant impact of exchange rate on return on assets in the long run. The short run revealed that exchange rate has no sufficient significant effect on return on assets of listed companies in South Africa. The study recommend that policymakers and economic authorities should introduce and implement strategies that favour and enhance the country's economic growth and stable exchange rate in order to improve company performance. Additionally, given that the company's short-run performance may highly depend on internal factors such as corporate governance, internal policies and business strategies, these decisions should be taken with precaution and a high level of professionalism.

The research work conducted by Ruhomaun *et al.* (2019), the researcher investigated the effect of selected macroeconomic variables on firm performance for listed firms in the

industrial products sector in Malaysia. The study established the relationship between exchange rate as independent variable and firm performance as the dependent variable. The study used panel data, and data was collected from 196 of the 264 listed firms from Thomson Reuter's DataStream for the period 2012–2016. The relationship between the variable was established via the GMM as an econometric analysis technique to investigate the relationship between the impacts of exchange rate on firm performance. Findings of the study revealed that exchange rate has an insignificant impact on firm performance.

In the year 2018, Gikombo and Mbugua examined the effect of selected macroeconomic variables on the performance of listed commercial banks in Kenya. The focus of the study is on all 44 listed commercial banks in Kenya as of 31 December 2016. Profitability was used as the endogenous variable for the study, which were measured by return on asset and return on equity, while exchange rate was used as the exogenous variable. A secondary source of data was used as the method of data collection for this study, in which data was collected from the published reports of the Central Bank of Kenya and the financial statements of all the listed commercial banks in Kenya for the period 2012–2016. The study used descriptive and inferential statistics conducted using SPSS version 23.0 to analyse the data collected by adopting a panel regression model. Findings of the study revealed that exchange rate has a positive significant impact on both return on asset and return on equity of commercial banks in Kenya. The study finally concludes that exchange rate is a significant variable affecting the performance of commercial banks in Kenya under return on asset and return on equity.

Based on the study examined by Oseifuah in the year 2016, the researcher analysed the key exogenous (external) factors influencing working capital management in a sample of five large non-financial firms listed on the Johannesburg Securities Exchange. The study used four exogenous factors and revealed that these are the key exogenous factors influencing working capital management in the sampled firms: the InfR, GDP, and ExcR. Data for the study was collected using a semi-structured questionnaire for the period 2003–2012. The results of the study revealed that 60% of the participants indicated that

GDP affects working capital management to a very high extent, while 80% of the participants indicated that InfRs affect working capital management to a high extent, and 20% of the participants are of the view that ExcRs affect working capital management to a very high extent.

Most of the reviewed literatures in this section also used the PPP theory to underpin their studies. In the field of financial performance and working capital management, PPP carries important implications for companies involved in international commerce. Fluctuations in exchange rates have a significant impact on the financial performance of organisations that have business operations in many countries (Siska Tri Amanda *et al.*, 2023). Companies that depend on importing commodities or raw materials may experience higher expenses due to the devaluation of the local currency (Mughal *et al.*, 2020). This cost effect might have a direct influence on profit margins, possibly resulting in reduced profitability. On the other hand, a devalued local currency might improve the competitiveness of a company's exports in international markets. This situation has the potential to enhance income and enhance financial performance. In the words of Ikechi and Anthony, (2020), the variability in exchange rates introduces instability into the cost framework of companies engaged in international transactions. Companies that depend on imports may see a direct effect on their working capital when there is a fluctuation in the cost of imported products or services caused by changes in currency exchange rates (Nguyen & Do, 2020). For example, if a local currency is lower, it might increase the cost of imports. This may need modifications in working capital management to ensure there is enough liquidity. Companies must modify their working capital plans to effectively traverse the difficulties presented by currency changes, guaranteeing the ability to sustain ideal levels of cash flow to fulfil operational requirements.

4.7.3 Gross domestic product

The study conducted by Farooq *et al.* (2023), the authors explore the peer influence on corporate working capital management practices. The study used cash conversion cycle as a proxy to measure working capital management as dependent variable, while GDP was used as the independent variable. For regression analysis, the study utilised 10 years of data from 2009-2018 of non-financial publicly listed firms at Pakistan stock exchange.

The study employed panel fixed effect and system generalized method of moment models to estimate regression between the variables of the study. The findings of the study showed that GDP has positive significant impact on working capital management. The study recommends social learning policy for corporate managers to learn from their peers to manage their working capital.

In the year 2022, Sucipto *et al.* examine how macroeconomic variables affect corporate financial performance in consumer goods companies in Indonesia. The population and sample size of the study is confined to consumer goods companies listed on the Indonesia stock exchange. The study used GDP to proxy macroeconomic variables as the independent variable while return on asset was used to proxy financial performance as the dependent variable. The findings of the study confirmed that macroeconomic factors (GDP) have no significant effect on company performance of Indonesia consumer goods companies.

Based on the study performed by Cheong and Hoang (2021), to examine the impact of macroeconomic variables on corporate profitability in Singapore and Hong Kong before, during, and after the global financial crisis. The study regresses the pooled sample of each market from 1998 to 2018. The sample is further divided into three subsamples, covering three economic periods: The pre-crisis (1998–2006), crisis (2007–2009), and post-crisis (2010–2018) periods. The study used the real GDP growth rate as proxy for macroeconomic variables, while return on assets, and return on equity were used as proxies to measure profitability. Two generalised systemic methods were used to analyse the data: The pooled sample method and the pre-crisis, crisis, and post-crisis period sample method. The result of the pooled study shows that firms in Hong Kong were more affected by macroeconomic factors during the global financial crisis than firms in Singapore. Singaporean firms are more sheltered from changes in macroeconomic elements as compared to firms in Hong Kong.

In the year 2020, Suseno analysed the influence of macroeconomic factors on the financial performance of consumer goods companies in Indonesia. The study used

purposive sampling techniques to sample 17 consumer goods companies that recorded a positive performance on the Indonesian stock exchange. Secondary sources of data collection were used in the study, and data was obtained from the Central Statistics Agency and Bank Indonesia for the period 2012–2018. The study used ROA and ROE to measure financial performance as dependent variables, while GDP growth rate was used as proxy variable for macroeconomic factors. Multiple regression analysis was used in the study to analyse the collected data. Findings revealed that GDP has positive but insignificant effect on the financial performance of consumer goods companies in Indonesia. The study concludes that macroeconomic factors had no significant effect on the companies' performance.

According to Moussa in the year 2019, the researcher examine key factors affecting working capital behavior of companies listed on the Egyptian stock exchange. The dependent variable used to proxy working capital behavior in the study was cash conversion cycle, while GDP was used as the independent variable in the study. Panel data analysis were employed for 68 listed Egyptian companies for the period 2000-2010. Different techniques of the generalised method of moments were used to test the validity of the research hypotheses. Findings from the results showed that GDP is affected by working capital behavior. The study recommend that financial managers should provide a better understanding of the impact of different macroeconomic factors on working capital behavior in an emerging market, such as Egypt's.

A research work conducted by Tahir in the year 2016, on the impact of working capital management on firms' performance in the manufacturing sectors of Pakistan. The study investigated the relationship between working capital management components and the performance of the firms by using panel data analysis and the GMM, as well as the ANOVA test, to explore any differences across sectors in Pakistan. Secondary sources of data collection were used in this study, and data was extracted from 294 manufacturing firms listed on the Karachi Stock Exchange for the period 2001–2012. ROA was used as the dependent variable for firms' performance measures. Also in the study, GDP was used as control variable. The results revealed that GDP has a significant positive effects

on firms' performance in Pakistan. The study concludes that working capital measures have a significant role in a firm's performance and that there is a difference in their effect on a sectorial basis.

The research work performed by Qian (2016), investigated the main factors that impact the working capital practices of some listed firms in China and their effect on firms' performance. The study used working capital management as the dependent variable, while GDP, a macroeconomic variable, was used as the independent variable. The study used a sample of more than 2000 listed companies for the period 2010 to 2014. It was discovered in the study that GDP has no significant influence on working capital management. The study suggests that this may be attributable to the good economic conditions in China during the research period or that the selected research period was short, and this variable was quite stable over the study period.

Most of the reviewed studies in this section used two major theories – multiplier effect theory and the aggregate demand and supply theory to underpin their studies. The multiplier effect theory is based on the concept that an initial injection of expenditure into the economy triggers a series of events resulting in higher income and further spending (Annamalah & Paraman, 2023). For companies, this implies that a surge in total economic activity and a rise in GDP may have a favourable influence on their financial performance. With the growth in consumer and company earnings, coupled with greater expenditure, organisations should expect a surge in sales and enhanced profitability. This phenomenon is especially evident in areas that have strong connections to consumer demand and other businesses that focus on consumers (Li *et al.*, 2022). The growth of economic activity resulting from the multiplier effect has immediate consequences for the management of working capital. As organisations see an increase in demand for their goods or services, it is necessary to efficiently manage working capital in order to maintain operational efficiency (Dash *et al.*, 2023). According to Ahlqvist *et al.*, (2022), businesses must anticipate these developments and ensure that their supply networks are capable of handling increased activity. In this case, it is crucial to engage in negotiations to secure advantageous credit terms with suppliers and effectively oversee the management of

working capital. These actions are essential for the efficient administration of working capital. Adopting this proactive strategy helps in averting stock shortages, maintaining optimal inventory levels, and safeguarding against any interruptions in the supply chain caused by the surge in demand.

In the context of the aggregate demand and supply theory, GDP serves as a measure of the overall demand for goods and services within an economy (Choi, 2023). Fluctuations in GDP may indicate changes in consumer spending, investment, and government expenditure. For firms, especially those in consumer goods sector, comprehending these developments is essential for predicting alterations in sales and income. In the words of Shaalan *et al.*, (2022), a higher GDP might suggest a rise in consumer spending, which has the potential to enhance sales for firms. Businesses often need modifying their working capital management techniques in reaction to fluctuations in collective demand. Escalating consumer demand, as seen by the growing GDP, could need an increase in inventory levels to adequately fulfil client requirements. Efficient working capital management entails optimising the quantities of inventories, accounts receivable, and accounts payable to enable seamless operations and aligning cash flow with fluctuations in economic activity (Seth *et al.*, 2020).

This concludes the discussion of the systematic literature review of macroeconomic variables on financial performance and working capital management. The next segment discussed the summary of the systematic literature studies.

4.8 Summary of systematic literature studies

The review of the literature reveals that there are few studies that investigate the effects of macroeconomic variables on financial performance and working capital management in different countries, including Nigeria. Al Sharif (2023) examines the impact of macroeconomic variables on performance of Islamic banking and reported a positive correlation between inflation rate and GDP on performance. Luitel (2023) examines the impact of macroeconomic variables on the profitability of Nepalese commercial banks and revealed that exchange rate has negative and significant impact on financial performance, while inflation rate and GDP have insignificant impact on financial performance.

Ogunlade *et al.* (2023) analyse the influence of working capital management on the financial performance of publicly traded consumer goods firms in Nigeria and discovered that inflation rate has a negative and significant impact on the financial performance. Ally (2022) determines the influence of macroeconomic factors on financial performance of commercial banks in Tanzania and realised that inflation rate and exchange rate influence financial performance. Majeed (2022) examine the effect of macroeconomic variables on Iraq stock exchange market performance and reported that exchange rate has a significant positive effect, while inflation rate has a negative but insignificant effect on stock market performance. Sucipto *et al.* (2022) examine how macroeconomic variables affect corporate financial performance in consumer goods companies in Indonesia and found out that inflation rate and GDP have no significant effect on company performance. Kola Benson *et al.* (2022) conducted a study to identify the effect of macroeconomic variables on company performance of listed companies in South Africa and reported a positive impact of GDP and exchange rate on company performance, while inflation rate has no impact on company performance. Girma (2022) investigate the impact of macroeconomic factors on the financial performance of insurance industry in Ethiopia and reported that GDP and inflation rate have insignificant effect on the financial performance of the insurance companies. Ruhomaun *et al.* (2019) established the relationship between ExcR on a firm's performance and realized that ExcR has an insignificant impact on firms' performance. Egbunike and Okerekeoti (2018) revealed that InfR and GDP show a significant effect on ROA, while ExcR show no significant effect on ROA. Gikombo and Mbugua (2018) discovered that GDP, ExcR and InfR have a significant positive influence on ROA.

Finally, the review of the literature revealed that few studies examined macroeconomic variables and working capital management. Farooq *et al.* (2023) explore the peer influence on corporate working capital management practices and reported that inflation rate has negative significant impact on working capital management, while GDP has positive significant impact on working capital management. Moussa (2019) examine key factors affecting working capital behavior of companies listed on the Egyptian stock exchange and discovered that GDP impact working capital management of companies

listed on the Egyptian stock exchange. Qian (2016) uncovered that GDP has no significant influence on working capital management. Oseifuah (2016) revealed that GDP, and ExcRs affects working capital management to a very high extent, while there is no effect between the InfR and working capital management.

This ends the discussion of the summary of systematic literature studies of macroeconomic variables effects on financial performance and working capital management.

4.9 Literature gap

The literature study examining the influence of macroeconomic variables on financial performance and working capital management in different nations provides valuable insights, although it also highlights notable literature gaps. An important gap exists in the lack of uniformity in the methodology used in various investigations, which range from regression analysis to correlation studies. The presence of such variability is a challenge when attempting to directly compare outcomes, therefore necessitating the adoption of standardised procedures that might improve clarity and coherence. In addition, the research often fails to compare different sectors in terms of the effects of macroeconomic variables. It is essential to conduct a more targeted investigation into how various sectors react to economic factors in order to provide customised policy suggestions. Moreover, while there is some research on the impact of macroeconomic factors on financial performance and working capital management, there is a significant lack of in-depth examination in this area. For a thorough comprehension, it is important to conduct a more targeted inquiry into the processes by which macroeconomic issues impact financial performance and the management of working capital. Finally, resolving these deficiencies in the existing body of research might provide a more comprehensive and practical understanding of the relationship among macroeconomic factors, financial performance, and working capital management. To this end, the current research aims to examine the influence of macroeconomic variables on financial performance and working capital management across three sectors: consumer goods, oil and gas, and the financial sector

4.10 Chapter summary

This chapter discussed the concept of macroeconomic variables (external factors) and how they impact the financial performance and working capital management of a company. This gives an insight into the conceptual framework that is used to organise the whole chapter. The chapter further discussed three macroeconomic variables (external factors) chosen for the study that are most important for the economy and are beyond the direct control of management, and how they impact the financial performance and working capital management of a company positively or negatively. The systematic literature review of different studies of macroeconomic variables on financial performance and working capital management and the outcome of their findings were also discussed. Al-Sharif (2023); Kola Benson *et al.* (2022); Ally (2022); Majeed (2022); Egbunike and Okerekeoti (2018); Cheong and Hoang (2021); Gikombo and Mbugua (2018); and Tahir (2016) relate in their various studies that inflation rate, exchange rate and gross domestic product have a positive and significant impact on financial performance. While, Luitel (2023); Ogunlade *et al.* (2023); and Ruhomaun *et al.* (2019) uncovered that exchange rate and inflation rate have negative but significant impact on financial performance. Lastly, Sucipto *et al.* (2022); Girma (2022); and Suseno (2020) reported that gross domestic product, and inflation rate have insignificant impact on financial performance.

Furthermore, Moussa (2019); and Oseifuah (2016) revealed that gross domestic product and exchange rate have positive and significant impact on working capital management, while Farooq *et al.* (2023); and Rajabi (2016) stated that inflation rate and gross domestic product have negative but significant impact on working capital management. Finally, Qian (2016), related that gross domestic product has insignificant impact on working capital management. The next chapter discuss the methodology adopted for the study.

CHAPTER 5: RESEARCH METHODOLOGY

5.1 Introduction

This chapter discusses the methodology adopted for the study. The chapter presents details on the research philosophy, research design, population, and sample size of the study. The chapter further gives a detailed explanation of the method and sources of data collection. The technique used for the data analysis, the statistical tools used for analysing the data, the variable measurements, and the model specification have also been presented. Finally, various robustness tests conducted in the study have been highlighted.

5.2 Research philosophy

The research philosophy is a vital and essential element of the research endeavour. The topic concerns the process of acquiring knowledge and the fundamental characteristics of knowledge associated to study (Madden, 2021). Hannon and Nguyen (2022) define research philosophy as a set of beliefs and assumptions that shape the acquisition of information about the nature of the reality under investigation. Gannon et al. (2022) define research philosophy as the systematic approach to gathering knowledge on a certain topic. The process involves performing a thorough investigation, formulating significant hypotheses, devising research strategies, and choosing suitable methodologies, all of which lead to the formation of diverse philosophical viewpoints (Feenstra et al., 2021). Kehoe et al. (2022) further argues that it represents the researcher's philosophical position about the nature of reality, genuine knowledge, and research standards. Tesar (2020) defines the above described perspectives as a "paradigm".

After analysing the perspectives of several researchers, namely Kelly (2020), Turska and Ludwig (2023), and Weigand et al. (2021), it is evident that they concur on the comprehension, categorization, and arrangement of research philosophy in relation to epistemology, ontology, and axiology. Nevertheless, while they have a similar topic, their interpretations and emphases vary. The study of philosophy is analysed by considering the assumptions established in ontological, epistemological, and axiological perspectives (Sarkia, 2021). Irfan et al. (2021) define ontology as the researcher's viewpoint of the

fundamental nature of reality, which is shaped by assumptions about the functioning of the universe. However, Lynch et al. (2020) argued that epistemology determines the essence of knowledge and the researcher's perspective on what is seen as acceptable knowledge. The researcher-respondent connection pertains to the interaction between the researcher and the individuals involved in the study. Axiology, as defined by Shan (2021), pertains to the researcher's viewpoint of the importance of values or ethics in research methodologies, as well as the manner in which the researcher acquires knowledge guided by these values.

Extensive literature evaluation has shown that different ideologies in research methods share fundamental evolutionary mechanisms. Mbanaso and colleagues (2023). The evidence includes the first presentation, portrayal, and categorization put out by other notable philosophical advocates. Livadas (2021) and Hellman (2021) provide distinct ontological and epistemological perspectives, which are characterised and categorised in contrasting manners.

In the year 2021, Abdi employs an ontological, epistemological, and axiological framework to analyse ideologies such as positivism, realism, interpretivism, and pragmatism. Matthews (2021) examined the ontological dimensions of realism, materialism, idealism, and relativism, highlighting their differences. In their 2019 publication, Baruah and Selleslaghs introduced a comprehensive classification system that incorporates the three major ideologies of positivism, post-positivism, and constructivism. Furthermore, they established a clear link to the concept of critical realism. Pragmatism, a philosophical idea, is believed to have originated from realism (Brister, 2023). These philosophies have common assumptions but differ in their focus on different outcomes and use unique classifications and categorizations to clarify methodological contradictions (Mayumi & Ota, 2022).

Each inquiry paradigm in question focuses on a certain area of interest that may be investigated inside a research paradigm. The end objective is to choose the most appropriate paradigm (Ali, 2023). Matta (2021) delineates each of the aforementioned paradigms as possessing different methodological approaches and theoretical perspectives. The aforementioned paradigms are used in situational research

endeavours, as elucidated by Javanmardi et al. (2019). Positivism and post-positivism are philosophical systems that prioritise the impact of causes on outcomes. Post-positivism, with its inclusion of phenomenological aspects, aims to comprehend the fundamental nature of the cosmos in which a particular event takes place (Brister, 2023).

Positivism, often known as the positivist approach, is an epistemological perspective that advocates for the use of natural scientific procedures in social science research (Karupiah, 2022). The positivist technique entails gathering empirical data from the observable realm and discerning patterns and cause-and-effect relationships to establish generalisations that resemble the ones formulated by scientists (Nyein et al., 2020). Positivist research asserts that reality is objectively expressed and may be defined by measurable characteristics that are not influenced by the researcher or their instruments. Irshaidat (2019) emphasised the prominent emphasis on using scientific data in quantitative representations.

Interpretivism asserts that the nature of reality is shaped by social interactions and seeks to clarify the domain of human perception and understanding (Irshaidat, 2019). It analyses events by taking into account the particular circumstances in which individuals see them (Davids & Waghid, 2021). Interpretivists argue that there is an intrinsic relationship between cause and effect, and achieving absolute objectivity is difficult. Furthermore, they maintain the conviction that research is always influenced by the researcher's values (Mbanaso et al., 2023). In essence, the interpretive approach relies on the perspectives of the persons under examination. Therefore, it is hypothesised that the participants' backgrounds and experiences have an impact on the research. Interpretivism use inductive reasoning to construct hypotheses or patterns of meaning throughout the research process. Conversely, the positivist approach starts by constructing a theory (Cuthbertson et al., 2020).

A utilitarian framework or philosophy that relies on expected or converged outcomes is insufficient for answering the research queries (Kelly & Cordeiro, 2020). Triangulation is a term used by pragmatists to describe the method of using several sources of data, hypotheses, ideas, and models. Their primary emphasis is on the examination of the "what" and "how" elements of the research problem (Hanson-DeFusco, 2023). Early

pragmatists maintained the conviction that conducting social investigations using a unified scientific methodology would likely uncover the truth about real-life situations and future consequences (Hanson-DeFusco, 2023). Evaluating the convergent and discriminant validity of measures is of utmost importance in pragmatism (Kelly & Cordeiro, 2020). Triangulating ideologies or paradigms is a process that entails using several approaches and procedures to collect converging information, hence minimising or removing the inherent bias associated with any one method, theory, or data source (Coates, 2020).

Realism asserts the independent reality of the objective world, apart from our subjective perception, and recognises the legitimacy of non-scientific sources of information (Lawani, 2020). Realism asserts that the existence of things is not influenced by our understanding of them (Hibberd & Petocz, 2022). Realism, comparable to positivism, emphasises the significance of performing experiments and rejects the notion of drawing sweeping generalisations from experimental results (Lawani, 2020). The reason for this is because reality is complex and ever evolving, comprising fundamental frameworks that rely on particular conditions.

5.2.1 Ontological perspective

Ontology is a philosophical discipline that specifically examines the basic nature and essence of existence. The study conducted by Gannon et al. (2022) examined the discrepancies between the objective reality and our subjective experiences, and the significant influence this has on our perspective of the world. According to Shan (2021), ontology is the study of existence and the search for comprehending the fundamental nature of reality. Ontology is a philosophical viewpoint within scientific investigation that focuses on the study of existence and the fundamental nature of reality (Gannon et al., 2022). A belief system encompasses an individual's comprehension and interpretation of what is deemed to be an objective reality. The concept of ontology revolves on the inquiry of whether social beings should be seen as objective entities or subjective entities. This perspective is consistent with the claim made by Akkerman et al. (2021) that ontology relates to the fundamental nature of social entities. In the context of the social or organisational issue being studied, ontology refers to the researcher's perspective on the underlying nature of reality or existence (Ronkainen & Wiltshire, 2019). Establishing the

ontology at the outset of the research process is of utmost importance as it has a direct impact on the research methodology, strategy, data collection methodologies, and data analysis. This identification assists in determining the study design used, taking into account the underlying epistemological framework.

5.2.2 Epistemological perspective

Epistemology seeks to comprehend and elucidate the process by which individuals acquire knowledge. Kelly (2020). The objective is to provide a conceptual framework for identifying the possible expressions of knowledge and assessing their appropriateness and validity (Boon, 2020). Epistemology pertains to the researcher's interaction with reality and their accumulation of knowledge about it (Jakobsen & Worm, 2020). Epistemology is a philosophical discipline concerned with establishing criteria for trustworthy sources of evidence and dependable knowledge outcomes (Müller & Locatelli, 2023). When a researcher choose a certain epistemology, they simultaneously embrace the procedures associated with that viewpoint. Kelly (2020) argues that the field of epistemology focuses on the nature and categorization of knowledge in order to elucidate the philosophical aspects of epistemology.

5.2.3 Methodological perspective

Methodology is a collection of systematic processes and designs used to choose and implement certain tactics, ultimately resulting in the intended results (Bergmann, 2023). The methodological hypothesis specifies the precise methods that the researcher will use to get the required information throughout the inquiry. The application of positivism entails using quantitative approaches to systematically investigate hypotheses and scientific questions (Towers et al., 2020). Post-positivism, meanwhile, offers a cohesive set of concepts that enhance the capacity to make accurate predictions. Furthermore, it uses qualitative methodologies to question and refute concepts, as stated by Gannon et al. (2022). Critical theory is based on an investigative process that requires a mutual exchange of ideas between the researcher and the topic being studied. The participative model is an inclusive strategy where all individuals actively engage in the political community via collaboration. Conversely, constructivism seeks to comprehend how the

interaction between the interviewer and the interviewee may foster and augment personal development (Bergmann, 2023).

5.2.4 Research philosophy of the study

This research used a positivist philosophy, taking inspiration from a comprehensive issue description and a specified purpose. The researcher maintained objectivity throughout data collection by relying only on public secondary sources and using statistical inference for analysis, based on epistemological and ontological principles. Furthermore, as stated by Gannon et al. (2022), positivism centres on verifiable facts, investigates causal connections, formulates testable hypotheses, and defines concepts in a manner conducive to straightforward quantification.

Given the problem description in this study, the research philosophy of positivism is the most appropriate approach for the inquiry. The study uses a quantitative research approach called ex-post factor, which forms the basis of the study. Data pertaining to the independent and dependent variables for the chosen time period was acquired via the collection of information from secondary sources. The research used a rigorous scientific methodology that centred on the systematic collection and analysis of observable and measurable data. The objective was to demonstrate causal links and provide explanatory insights. The performed research was characterised by objectivity, grounded on logical thinking, and included quantifiable variables. The researchers devised hypotheses, performed tests to assess them, and then confirmed them. Subsequently, the data was analysed in order to derive logical conclusions.

5.3 Research design

The study used an ex-post facto research design, which is consistent with the positivist perspective. This viewpoint prioritises the gathering and examination of numerical data, placing significant importance on reliability and regulation (Goodman-Scott et al., 2021). This design integrates supplementary data acquired from the NGX and NBS. The primary goal is to provide a theoretical foundation for evaluating the feasibility of different forms of information and ensuring their trustworthiness and sufficiency. A retrospective research approach was used since it relied on past events and required the utilisation of data from the NGX and NBS of the firms being investigated.

Pattnaik et al. (2023) define ex-post facto as a quasi-experimental design that relies on real-life observations to distinguish between groups and interpret results, but it does not meet the criteria of a true experiment. The ex-post facto design is a direct result of the natural history. It emulates genuine experimentation by comparing individuals/variables from distinct groups with similar backgrounds and overall settings.

The research technique is employed to utilise quantitative statistical data in order to analyse the influence of firm-specific characteristics and macroeconomic variables on the financial performance and working capital management of the financial sector, oil and gas sector, and consumer goods sector listed in Nigeria. The variables analysed included the return on asset, which serves as a financial performance indicator and functions as the dependent variable, and the current ratio, which serves as a working capital management indicator and also acts as the dependent variable. The independent variables are company size, leverage, operational cycle, and sales growth for firm-specific characteristics, and GDP, inflation rate, and exchange rate for macroeconomic factors. The main goal was to improve the distinctive features of the firms and boost the macroeconomic factors in the chosen industries in Nigeria. This approach enables researchers to analyse the interconnectedness of several components within a single study. Furthermore, it allows a researcher to methodically analyse several factors, either individually or in combination, that might potentially impact the phenomena being studied (Hair et al. 2019). The selected research design is appropriate for examining the relationship between variables, which is the primary objective of the study. The study was conducted with an impartial approach, using logical reasoning and verifiable data. The theories were thoroughly examined, validated, and supported by rigorous data analysis, leading to logical conclusions.

5.4 Population of the Study

According to Hair et al. (2019), in research, the phrase "population" refers to the whole group of persons, components, or units that have common characteristics and are the main focus of analysis. The term refers to the larger population that might possibly be observed, from which a sample is chosen for the purpose of collecting and analysing data (Garson, 2016). The population acts as the broader context in which researchers want to

apply their findings, and its characteristics determine the scope and significance of the study's results. The population in a research study may consist of several items, such as persons, animals, objects, events, or phenomena (Tabachnick and Fidel, 2013). Researchers carefully develop and clarify the features of this demographic to ensure the study's relevance and trustworthiness. The research focused on firms within the financial sector, oil and gas sector, and consumer goods sector. As of December 31, 2022, there are 50 companies in the finance sector, 10 companies in the oil and gas sector, and 21 companies in the consumer goods sector. The data is shown in Table 5.1 below:

Table 5.1: Target population

Names of sectors	Number of companies
Financial sector	50
Oil and gas sector	10
Consumer goods sector	21

Source: Author's Computation (2023)

5.5 Sample Size and Sampling Technique

Sample size refers to the number of individual units, components, or individuals selected from a larger population to be included in a research study (Hair et al. 2019). The accuracy and reliability of study outcomes are substantially influenced by research design and procedure. Determining the ideal sample size requires finding a balance between gathering enough data to make meaningful conclusions and managing practical constraints such as time and money (Lee & Chen, 2020). In this study, the researcher employed a simple random sampling method to select a sample size of 41 companies from the financial sector out of a total of 50 listed companies, eight companies from the oil and gas sector out of the 10 listed companies, and 17 companies from the consumer goods sector out of the 21 listed companies on the Nigerian Exchange Group. The rationale for using the sample size is the availability of the firms' audited financial accounts on the Nigerian Exchange Group website (www.ngxgroup.com). Simple random sampling is a technique for picking a sample from a population, where each person or element has an equal likelihood of being picked. This ensures that every conceivable sample has an

equal chance of being selected (Kothari & Garg, 2014). The research used an Excel spreadsheet to employ a random selection process, resulting in the inclusion of 41 firms from the financial sector, eight companies from the oil and gas sector, and 17 companies from the consumer goods sector for the study (see to Table 5.2). The research used the extensive data acquired from the NGX website (www.ngxgroup.com) and the NBS website (www.nigerianstat.gov.ng). This is achievable due to the availability of data. Moreover, it bestows reliability and eliminates sample imperfections during the evaluation process. The following table, labelled as Table 5.2, displays the firms that were included in the sample.

Table 5.2: Sample companies

Names of sectors	Number of companies
Financial sector	41
Oil and gas sector	8
Consumer goods sector	17

Source: Author's Computation (2023)

5.6 Sources and method of data collection

There are basically two sources of data collection: primary and secondary sources. This study used secondary sources of data collection. The data was derived from the 2013–2022 published audited annual reports and accounts of the selected financial, oil and gas, and consumer goods companies.

The rationale for choosing the time period (2013–2022) to extract data from published audited annual reports and accounts is supported based on these reasons. The selection of the time range is influenced by practical issues, such as the availability of researchers, resources, and the practicality of data gathering. A 10 years timeframe finds an equilibrium between obtaining significant data and handling pragmatic limitations. Furthermore, the global economy saw a multitude of transformations and obstacles during the selected period, including economic volatility, geopolitical occurrences, and the repercussions of the COVID-19 epidemic. Researchers often aim to study how

companies react to changing economic and market circumstances, and the chosen time range permits an analysis of these variables. Ultimately, the allotted time period for the inclusion of an appropriate amount of historical background. Researchers often strive to capture trends and temporal changes in order to get a full picture of the evolution of variables. This time period achieves a harmonious equilibrium by including historical patterns while also emphasising modern advancements.

The data from the annual report are reliable because, according to Part B, Chapter 14 (Section 374–399) of the Nigerian Companies and Allied Matters Act 2020 (CAMA, 2020:20–21), companies are required to keep accounts and produce accounts that give a true and fair view of the company. Companies are required to prepare a statement of their financial position, a statement of comprehensive income, the names of directors and their reports, and an auditor's report, which must be published. Based on these requirements having been met, this study used annual reports and statements filed with the NGX to extract data for the internal factors (firm-specific characteristics) and the NBS to extract data for the external factors (macroeconomic variables).

5.7 Description of variables

This study undertook the issue of identifying key variables that influence the financial performance and working capital management of Nigeria's listed companies and explored and examined the impact of firm-specific characteristics and macroeconomic variables on financial performance and working capital management. As a result, several variables were used to test the hypotheses of the study. They include dependent and independent variables.

5.7.1 Dependent variables

Dependent variables are variables that are used to measure the performance of a company. Financial ratios are used to compare different companies in the same industry and to compare different industries over a period of years. A company develops certain norms that may indicate future success or failure. The dependent variables in this study are financial performance and working capital management. This study used ROA as a proxy for financial performance and the current ratio as a proxy for working capital

management as dependent variables. This is because ROA gives a clearer view of the performance of a company by revealing the amount of profit a company earns from its assets, while the current ratio indicates whether a company has enough short-term assets to cover its short-term debt. These dependent variables were discussed in Chapter 2 of this study, and the measurement used to measure the variables was also mentioned.

5.7.2 Independent variables

Regarding the independent variables, firm-specific characteristics are proxied by using firm size, leverage, sales growth, and the operating cycle, while macroeconomic variables are proxied by using GDP, InfR, and ExcR. These independent variables were discussed in Chapters 3 and Chapter 4 of this study, and the measurement used to measure the variables was also mentioned.

5.8 Technique and tools of data analysis

The multiple regression technique is used to measure the impact the explanatory variables have on the outcome variables (Duru, 2014:56). The study examined the effect of firm-specific characteristics and macroeconomic variables as a measure of financial performance and working capital management. With the companies' year-end records and the annual rate of the external factors, the study applied multiple regression models using STATA14 statistical software to test the various hypotheses. Multiple regression analysis is a statistical tool for understanding the relationship between two or more variables; it allows for greater flexibility. This tool allows one to examine how multiple independent variables are related to a dependent variable (Uyanik & Guler, 2013:234). After identifying how the multiple variables relate to the dependent variable, information about all the exogenous variables can be taken and used to make more powerful and accurate predictions about the variables. This process is known as multiple regressions (Duru, 2014:56). It is an advanced statistical tool and extremely powerful when one is trying to develop a model for predicting a wide variety of outcomes. Multiple regression analysis allows one to explicitly control for many other factors that simultaneously affect the outcome variable.

This is important both for testing economic theories and for evaluating policy effects when one must rely on non-experimental data. According to Gregorich *et al.* (2021:1), multiple regression models can accommodate many explanatory variables that may be correlated and can also be used to build better models for predicting the dependent variable. Various robustness tests, such as descriptive statistics, correlation matrix to test for autocorrelation, the multicollinearity test, and the Hausman test for fixed and random effect models were carried out to improve the validity of the results.

5.8.1 Robustness test

The robustness test was used to determine the validity and reliability of the results for assessing the impact of firm-specific characteristics and macroeconomic variables on financial performance and on working capital management of listed companies in Nigeria using statistical and econometric techniques such as multiple regression analysis.

5.8.2 Multicollinearity test

The variance inflation factor (VIF) and correlation matrix were estimated to detect the presence of multicollinearity among the explanatory variables.

5.8.3 Hausman test

Hausman test was performed for firm-specific characteristic variables to decide the appropriate regression model between fixed and random effect models. Hausman test was conducted under the following hypotheses:

H_0 = Random effect model results will be accepted

H_1 = Fixed effect model results will be accepted

If the Chi-squared p-value is less than 0.10, then the estimated fixed effect model result will be accepted over the estimated random effect model result, and if otherwise, the latter will be accepted.

5.9 Model specification and variable measurement

The term "model specification" refers to a description of the procedure by which the independent variables produce the dependent variable. Thus, it encompasses the choice of independent and dependent variables, as well as the functional form connecting the independent variables to the dependent variable. Variable measurement, on the other hand, is an unknown attribute that measures a particular entity and can take one or more values. It is commonly used for scientific research purposes.

In this study, a general formula similar to Ketema's (2018:25) was used as the model specification. The independent and dependent variables were used in an equation called multiple regressions. To express the model of multiple regressions in an equation modified to suit the respective hypotheses, this study used panel data that covered 2013–2022. The model of the study is given below:

$$ROA_{it} = \beta_0 + \sum_{t=1}^n \beta_i X_{it} + \varepsilon \dots \dots \dots \text{Equation 1}$$

$$CR_{it} = \beta_0 + \sum_{t=1}^n \beta_i X_{it} + \varepsilon \dots \dots \dots \text{Equation 2}$$

Where:

ROA_{it}: Return on assets of a company i at time t, i = 1, 2, 3.....

CR_{it}: Current ratio of a company i at time t, i = 1, 2, 3.....

β₀ = the intercept of the equation

β_i = coefficients of X_{it} variables

X_{it} = the different independent variables of firm-specific characteristics and macroeconomic variables of company i at time t

t = time from 1, 2, 3 10 years

ε = error term

To test the hypotheses of the explanatory variables on the outcome variables in Nigeria, the multiple linear regression in Equation 1 and Equation 2 was modified, which is given below:

$$\mathbf{ROA}_{it} = \beta_0 + \beta_1(\mathbf{FZ}_{it}) + \beta_2(\mathbf{LEV}_{it}) + \beta_3(\mathbf{SG}_{it}) + \beta_4(\mathbf{OC}_{it}) + \beta_5(\mathbf{GDP}_{it}) + \beta_6(\mathbf{InfR}_{it}) + \beta_7(\mathbf{ExcR}_{it}) + \varepsilon \dots \text{Equation 3}$$

$$\mathbf{CR}_{it} = \beta_0 + \beta_1(\mathbf{FZ}_{it}) + \beta_2(\mathbf{LEV}_{it}) + \beta_3(\mathbf{SG}_{it}) + \beta_4(\mathbf{OC}_{it}) + \beta_5(\mathbf{GDP}_{it}) + \beta_6(\mathbf{InfR}_{it}) + \beta_7(\mathbf{ExcR}_{it}) + \varepsilon \dots \text{Equation 4}$$

Where:

$\beta_0, \beta_1, \beta_2, \beta_3 \dots \beta_7$ are parameters to be estimated with a priori expectation.

FZ = Firm size

LEV = Leverage

SG = Sales growth

OC = Operating cycle

GDP = Gross domestic product

InfR = Inflation rate

ExcR = Exchange rate

Furthermore, the analysis was conducted at 1%, 5%, and 10% levels of significance, respectively, against the coefficient values in the result tables presented in the next chapter. The variable measurement adopted for this study is indicated in Table 5.3 below.

Table 5.3: Variable measurement

Variables	Nature of Variable	Proxy	Measurement	Source
Return on assets	Dependent variables	ROA	<u>Profit/loss before interest and tax</u> Total asset	Bulenga, 2019
Current ratio		CR	<u>Current assets</u> Current liabilities	Senthilnathan, 2020
Firm size	Independent Variables (Internal factors)	FZ	Natural logarithm of total assets	Dioha <i>et al.</i> 2018
Leverage		LEV	<u>Total Debt</u> Total Asset	Bon & Hartoko, 2022
Operating cycle		OC	Inventory Conversion Period + Receivables Conversion Period	Danyadado & Jinjiri, 2022
Sales growth		SG	<u>Current year's sales – Previous year's sales</u> Previous year's sales	Hajisaaid, 2020
Gross domestic product	(External factors)	GDP growth rate	Annual GDP growth rate	Egbunike & Okerekeoti, 2018
Inflation rate		InfR	Annual change in the consumer price index (CPI)	Ullah <i>et al.</i> 2018
Exchange rate		ExcR	Annual/official exchange rates	Egbunike & Okerekeoti, 2018

Source: Author's Computation (2023)

5.10 Chapter summary

This chapter discussed the methodology adopted for the study. The chapter discussed the research philosophy and research design used for the study. Finally, the population, sample size and sample techniques, sources and methods of data collection, techniques and tools of data analysis, the robustness test carried out in the study, model specification and variable measurement, and computing the multiple regression analysis for the study were all discussed. The next chapter present the results of the data analysis of firm-

specific characteristics and macroeconomic variables on financial performance and working capital management.

CHAPTER 6: RESEARCH FINDINGS AND RESULTS OF FIRM-SPECIFIC CHARACTERISTICS AND MACROECONOMIC VARIABLES ON FINANCIAL PERFORMANCE AND WORKING CAPITAL MANAGEMENT

6.1 Introduction

This chapter links with the literatures reviewed in Chapter 3 and Chapter 4 (page 75 and 113). The chapter presents and analyses the descriptive statistics and the multiple regression of the impact of firm-specific characteristics and macroeconomic variables on financial performance and working capital management. In this chapter, the data collected from the model specified in Chapter 5 (pages 141–142) of this study were presented, analysed, and discussed. The study employed descriptive analysis, a correlation matrix, a multicollinearity test using the variance inflation factor (VIF), a Hausman test, a multiplier test for the random effect model, and finally regression analysis.

This chapter used and discussed the regression results of the sample companies to test the hypotheses in 1.6.1 and 1.6.2 (pages 20–21), the research question 1.5.1 and 1.5.2 (pages 19-20), and the research objectives 1.4.1 to 1.4.4 (pages 18-19) of this study. The main aim is to draw certain conclusions on the impact of firm-specific characteristics and macroeconomic variables on financial performance and working capital management in three listed companies in Nigeria. Another aim is to highlight the chosen sectors most impacted by firm-specific characteristics and macroeconomic variables in Nigeria within the period under study.

The next section presents and discusses the results of the chosen sectors, starting with the consumer goods sector, followed by the financial sector, and lastly, the oil and gas sector.

6.2 Results of the consumer goods sector

This section presents and discusses the descriptive statistics, correlation matrix, multicollinearity test using VIF, Hausman test, and finally the regression results of the sample companies listed under the consumer goods sector.

6.2.1 Descriptive statistics of the consumer goods sector

The descriptive statistics are arranged according to the companies operating within the consumer goods sector. The table below summarises the descriptive statistics showing the mean, standard deviation, minimum, maximum, skewness and kurtosis values of the sample companies listed under the consumer goods sector in Nigeria.

Table 6.1: Summary of descriptive statistics for consumer goods sector

Variables	Observations	Mean	Standard deviation	Minimum	Maximum	Skewness	Kurtosis
ROA	170	0.1139	0.6339	-2.3540	6.1932	6.3297	59.4352
CR	170	1.0987	0.6368	0.0058	3.5924	1.1532	5.4313
FZ	170	7.7980	1.1426	4.3259	11.0280	-0.5357	4.2409
LEV	170	1.4162	3.4894	0.1936	19.5571	4.0697	18.3264
OC	170	137.46	66.3535	0	288.7913	0.0527	2.7620
SG	170	0.1261	0.3083	-0.9070	2.3019	2.4522	18.1972
GDP	170	2.4060	2.6983	-1.7900	6.6700	-0.0193	2.1857
InfR	170	13.281	4.1138	8.0600	21.3400	0.4083	2.1783
ExcR	170	297.64	99.9013	157.31	448.90	-0.0890	1.6800

Source: Research computation using STATA 14

Table 6.1 displays a thorough overview of descriptive data for important factors in the consumer goods sector, offering valuable insights into the financial and economic situation of the firms represented. The factors being examined include Return on Assets (ROA), Current Ratio (CR), Firm Size (FZ), Leverage (LEV), Operating Cycle (OC), Sales Growth (SG), Gross Domestic Product (GDP), Inflation Rate (InfR), and Exchange Rate (ExcR).

The average return on assets (ROA) for the consumer goods industry is 0.1139, which indicates a positive mean ROA. Nonetheless, the substantial standard deviation of 0.6339 indicates a notable range of variability in the performance of each firm, with the lowest return on assets (ROA) being -2.3540 and the highest being 6.1932. The presence of a large standard deviation indicates a significant variation in performance across the studied firms. This means that some companies are achieving excellent results, while others are struggling with poor returns. The skewness value of 6.3297 and kurtosis value of 59.4352 provide valuable information about the distribution of ROA (Return on Assets) values. A positive skewness suggests that the distribution is skewed towards the right, with a longer tail on the positive side. This implies that there are a small number of firms that have very high Return on Assets (ROA), which is causing the positive skewness. The high kurtosis of a distribution reflects the degree of peakedness and the presence of hefty tails, which emphasises the concentration of extreme values. The distribution of ROA in the sector is marked by a small number of businesses that have either very high or low returns on assets. This highlights the significance of comprehending the average ROA when evaluating the data.

The mean current ratio for the consumer goods industry is 1.0987, indicating that, on average, firms in this sector have a somewhat higher amount of current assets compared to current liabilities. This ratio serves as an indication of the liquidity situation of the industry, with a value over 1 indicating the capacity to meet short-term commitments. The analysed firms exhibit variety in liquidity situations, as shown by a standard deviation of 0.6368 points. This suggests that certain companies possess a more favourable liquidity buffer compared to others. An analysis of the skewness value of 1.1532 and kurtosis value of 5.4313 provide valuable information about the distribution of current ratio values. The distribution is significantly positively skewed, indicating that there are firms with higher current ratios that are affecting the skewness towards the right side. The kurtosis value suggests a distribution with significantly heavier tails, indicating that while most organisations have current ratios close to the average, there are outliers with more extreme values. Hence, the industry has a mostly robust liquidity attitude. However, it is prudent to exercise care and comprehend the unique factors that may impact the current ratios of certain firms, as they may deviate from the norm.

The mean Firm Size (FZ) for enterprises in the consumer products industry is 7.7980, with a standard deviation of 1.1426. This statistic offers valuable information about the mean magnitude of activities within the sector and the level of variation in company sizes. The average score of 7.7980 indicates that firms in the consumer products industry tend to be quite large in size. Nevertheless, the standard deviation of 1.1426 suggests a significant level of dispersion in business sizes, which highlights the variation in the magnitude of activities. The skewness value of -0.5357 indicates a distribution that is negatively skewed, meaning that there are bigger organisations that are causing the distribution to be pulled towards the left side. The kurtosis value of 4.2409 indicates that the distribution has somewhat heavy tails, indicating that while the majority of organisations have sizes close to the average, there are a few with much larger or smaller values.

The Leverage (LEV) statistic, which measures the capital structure of firms in the consumer goods industry, has an average value of 1.4162, indicating a moderately cautious attitude to borrowing money. Nevertheless, the considerable standard deviation of 3.4894 indicates a wide variation in leverage levels across the investigated organisations. The variation is seen in the wide spectrum of LEV values, ranging from 0.1936 to 19.5571, suggesting that some companies have higher levels of leverage while others choose a more cautious financial structure. The skewness value of 4.0697 indicates that the distribution is strongly favourably skewed. The presence of a significant tail on the right side of the distribution indicates a positive skewness, suggesting the existence of enterprises with unusually high leverage that are dragging the distribution in that direction. The kurtosis value of 18.3264 emphasises the presence of strong tails in the distribution. This indicates that the distribution contains values that are farther away from the average, indicating the presence of firms with unusually high levels of leverage, which contributes to the positive skewness.

The average length of the Operating Cycle (OC) for enterprises in the consumer goods sector is 137.46. This represents the time it takes for a company to transform its raw materials into finished items and then turn them into cash via sales. The presence of a standard deviation of 66.3535 suggests that there is a significant level of variation in the

lengths of operational cycles, which shows a diverse range of durations across different organisations. Certain entities may effectively optimise their operating cycles, resulting in shorter durations, whilst others may encounter difficulties that lead to longer operating cycles. The skewness value of 0.0527 indicates that the distribution is almost symmetrical. A skewness value approaching 0 suggests a distribution that is well-balanced, with similar frequencies of both shorter and longer working cycles. A kurtosis value of 2.7620 indicates a distribution with tails that are somewhat heavy. Although the kurtosis is not very high, it suggests that there is some variation in the lengths of operational cycles. This means that a few organisations have cycles that are either shorter or longer compared to the majority.

The Sales Growth (SG) measure for the consumer goods sector has an average of 0.1261, indicating a favourable upward trend in sales across the monitored businesses. This suggests that, on average, firms in this industry saw an increase in their sales during the stated timeframe. Nevertheless, the standard deviation of 0.3083 indicates a significant amount of variation in the rates of sales growth across particular organisations. The range, spanning from -0.9070 to 2.3019, indicates that some organisations may have had a decrease in revenue while others saw significant expansion. The skewness value of 2.4522 indicates a distribution that is very favourably skewed. Within this particular framework, it is probable that most enterprises saw a moderate increase in sales, but a small number of exceptional cases contributed to the overall favourable deviation from the norm. The kurtosis value of 18.1972 suggests that the distribution has heavy tails, indicating significant deviations in sales growth rates. This implies that a few organisations have seen extraordinarily high or low growth rates relative to the rest.

The Gross Domestic Product (GDP) statistic, with a mean value of 2.4060, acts as a substitute for the economic circumstances in which consumer products businesses function. This average represents the overall amount of economic activity over the measured timeframe. The standard deviation of 2.6983 indicates a notable level of variability in economic situations, reflecting the variations in GDP during various historical periods. The skewness value of -0.0193 indicates that the distribution is almost symmetrical. Within the framework of GDP, this signifies a state of economic

circumstances that are evenly distributed, without any notable inclination towards either substantial expansion or decline. The kurtosis value of 2.1857 suggests that the distribution has tails that are somewhat different from a normal distribution. The dataset has a modest kurtosis and a skewness near to zero, indicating that while there is fluctuation in economic circumstances, extreme values (such as extremely high or very low GDP) are not often seen.

The Inflation Rate (InfR) measure, with a mean value of 13.281, offers insights into the average rate at which prices grow throughout the given time. This average represents the overall pattern of inflation throughout the specified period. The standard deviation of 4.1138 indicates the extent of variation in inflation rates, suggesting that enterprises may have experienced varying degrees of inflationary pressures over a period of time. The skewness value of 0.4083 indicates that the distribution is somewhat skewed. Within the framework of inflation rates, this suggests a propensity for inflation to exhibit a minor bias towards higher values, indicating that times of relatively elevated inflation occur more often than periods of lower inflation. The kurtosis score of 2.1783 indicates that the dataset has a distribution with modest tails, suggesting that extreme inflation values are not very common.

The Exchange Rate (ExcR) indicator, with a mean value of 297.64, represents the average exchange rates recorded over the specified time. The average acts as a benchmark for the overall value of the local currency in relation to foreign currencies, which has an influence on enterprises involved in international commerce. The standard deviation of 99.9013 indicates the extent of variation in currency rates, emphasising the possible difficulties and advantages that firms may encounter when dealing with numerous currencies. The skewness value of -0.0890 suggests that the distribution is almost symmetrical. Within the framework of exchange rates, this indicates a roughly equitable prevalence of both upward and downward tendencies. The kurtosis score of 1.6800 indicates that the distribution has modest tails, meaning that extreme values in exchange rates are not very common in the sample.

6.2.2 Correlation matrix of consumer goods sector

The correlation matrix explains the level of relationship between dependent and independent variables in a regression model (Mishra & Min, 2010:117). The correlation matrix is utilised as an initial assessment of the presence of multicollinearity. Multicollinearity is a phenomenon that arises when two or more predictor variables in a regression model exhibit a high degree of correlation, indicating that one variable can be accurately predicted from the others using a linear relationship. A high correlation between variables may indicate the presence of multicollinearity. Javid (2014:213) suggests that multicollinearity becomes a problem only when the correlation coefficient exceeds 0.80. However, a good regression model should not have a high value of correlation between independent variables (Ahmed, 2014:204). The table below presents a summary of the Pearson correlation results of the sample companies in the consumer goods sector considered in the study.

Table 6.2: Summary of Pearson correlation matrix for the consumer goods sector

	ROA	CR	FZ	LEV	OC	SG	GDP	InfR	ExcR
ROA	1.0000								
Sig									
CR	-0.1295	1.0000							
Sig	0.0925								
FZ	-0.1483	0.2930	1.0000						
Sig	0.0536	0.0001							
LEV	0.1738	-0.4227	-0.6420	1.0000					
Sig	0.0234	0.0000	0.0000						
OC	-0.1693	0.4222	0.1108	-0.4975	1.0000				
Sig	0.0273	0.0000	0.1504	0.0000					
SG	0.0002	-0.0994	0.1829	-0.0953	-0.1347	1.0000			
Sig	0.9977	0.1972	0.0170	0.2166	0.0798				
GDP	-0.0969	-0.0375	-0.0651	0.0188	-0.1755	0.1081	1.0000		
Sig	0.2087	0.6271	0.3987	0.8074	0.0221	0.1604			
InfR	0.0664	0.0526	0.0756	-0.0259	0.0470	0.0515	-0.4021	1.0000	
Sig	0.3896	0.4957	0.3274	0.7373	0.5430	0.5044	0.0000		
ExcR	0.0519	0.1128	0.1079	0.0016	0.0632	0.0185	-0.4081	0.6036	1.0000
Sig	0.5014	0.1431	0.1614	0.9838	0.4127	0.8105	0.0000	0.0000	

Source: Research computation using STATA 14

The analysis presented in Table 6.2 reveals that the correlation coefficients among the independent variables of the sample companies under the consumer goods sector listed on the Nigerian Exchange Group during the studied period exhibit a significant degree of diminution. According to Kalnins (2018:2364), a correlation coefficient of 0.8 or higher between two independent variables is deemed excessive and may suggest the probable existence of multicollinearity among the variables.

The table above, labelled as Table 6.2, shows a statistically significant negative connection between ROA and CR at a significance level of 10%. The correlation coefficient is -0.1295. This implies that if the ROA drops, there is a propensity for the CR to rise. This suggests a possible compromise between the availability of cash (CR) and the capacity to generate profit (ROA). Companies with poorer profitability may have a higher proportion of current assets compared to their current liabilities.

The observed negative correlation between the CR and ROA at a significance level of 10% (-0.1295) suggests that there is a connection between greater current ratios and poorer returns on assets. This underscores the difficulty that organisations may have in striking a harmonious equilibrium between immediate cash flow and enduring financial gain. A greater current ratio suggests a cautious strategy towards managing working capital, perhaps sacrificing the opportunity to maximise profits.

The variable FZ has a notable inverse relationship with ROA, with a correlation coefficient of -0.1483, which is statistically significant at the 5% level. This implies that bigger companies can see reduced returns on their assets. The correlation between this linkages might be ascribed to the intricacies and difficulties linked to overseeing bigger operations, which may result in reduced efficiency and profitability.

LEV has strong associations with ROA (0.1738), FZ (-0.4227), and OC (-0.6420) at a significance level of 1%. Increased debt is correlated with decreased return on assets (ROA), reduced firm size, and a shorter duration of the operating cycle. This suggests that company's that use a higher amount of debt in their overall financial framework may encounter heightened financial vulnerability, which may adversely affect both their capacity to generate profits and their operational effectiveness.

The observed variable OC has a notable inverse correlation with the variable ROA (-0.1693) and a positive correlation with the variable LEV (0.4222) at a significance level of 1%. A reduced operating cycle is linked to a better ROA, indicating improved effectiveness in transforming inputs into revenues. Moreover, the strong association with leverage implies that organisations with shorter operating cycles may have a greater ability to handle increased amounts of debt.

The variable SG has a notable positive association with OC, with a correlation coefficient of 0.1829, which is statistically significant at the 5% level of significance. A longer operational cycle is often correlated with higher sales growth, suggesting a possible rise in demand and production cycles. The significance of this connection highlights the need of proficient administration of working capital to facilitate the growth of corporate activities.

No statistically significant relationships between GDP and other variables were found at the 1%, 5%, or 10% significance levels. These findings indicate that the financial and operational variables in the consumer goods sector may not be directly affected by changes in GDP over the analysed period.

The variable InfR has a notable positive association with ExcR, with a correlation coefficient of 0.1128, which is statistically significant at the 10% level. Increased inflation rates are correlated with elevated exchange rates, suggesting a possible influence of inflation on the value of currencies. This link highlights the interdependence of macroeconomic issues and their impact on financial variables.

At a significance level of 5%, ExcR exhibits a notable negative correlation of -0.1347 with ROA and a positive correlation of 0.0632 with LEV. A positive correlation exists between a higher exchange rate and a lower ROA, indicating that corporations may have difficulties in achieving profitability while operating in countries with stronger local currencies. Moreover, the observed positive association between leverage and exchange rates suggests that companies may choose for increased debt when faced with higher exchange rates, perhaps as a means to reduce currency-related risks.

The next table presents a summary of the Spearman correlation results of the sample companies in the consumer goods sector considered in the study.

Table 6.3: Summary of Spearman correlation matrix for the consumer goods sector

	ROA	CR	FZ	LEV	OC	SG	GDP	InfR	ExcR
ROA	1.0000								
Sig									
CR	0.0841	1.0000							
Sig	0.2757								
FZ	0.2229	0.0447	1.0000						
Sig	0.0035	0.5631							
LEV	-0.1842	-0.4217	-0.5528	1.0000					
Sig	0.0162	0.0000	0.0000						
OC	-0.0698	0.4836	-0.1605	-0.0268	1.0000				
Sig	0.3661	0.0000	0.0365	0.7288					
SG	0.3284	0.0321	0.2899	-0.1346	-0.0910	1.0000			
Sig	0.0000	0.6780	0.0001	0.0802	0.2377				
GDP	0.0946	0.0114	-0.0554	-0.0752	-0.1926	0.1666	1.0000		
Sig	0.2198	0.8828	0.4727	0.3299	0.0119	0.0299			
InfR	-0.0626	-0.0016	0.1173	0.1317	0.0671	0.2098	-0.3576	1.0000	
Sig	0.4172	0.9832	0.1276	0.0868	0.3848	0.0060	0.0000		
ExcR	-0.1308	0.0438	0.1564	0.1152	0.0708	0.0916	-0.2970	0.7939	1.0000
Sig	0.0892	0.5703	0.0416	0.1348	0.3590	0.2348	0.0001	0.0000	

Source: Research computation using STATA 14

The Spearman correlation matrix offers insights into recurring correlations between variables, incorporating non-linear interactions that may be disregarded by the Pearson correlation. It is especially beneficial when the data does not adhere to the principles of linearity in correlation analysis.

The Spearman correlation coefficient in Table 6.3 reveals diverse correlations between ROA, CR and other factors in the consumer goods sector. Remarkably, the CR exhibits a statistically insignificant connection at the 5% significance level ($p = 0.0841$). Unlike the Pearson correlation, the Spearman correlation does not indicate a linear association between ROA and CR. The ROA has a notable inverse connection with both FZ ($p = 0.2229$) and LEV ($p = -0.1842$), suggesting the possibility of non-linear relationships.

The association between CR and other factors has inconsistent outcomes. The absence of a statistically significant connection with ROA indicates that there is no linear relationship between the variables. This highlights the need to take into account non-linear patterns while analysing the data. The data shows a strong positive association between FZ and current ratios, with a p-value of 0.0035. This suggests that bigger enterprises tend to have greater current ratios. The Spearman correlation coefficient is well-suited for discovering monotonic correlations since it does not rely on the assumption of linearity.

The connection between FZ and ROA is not statistically significant, indicating that the relationship between the size of a business and its return on assets may not follow a strictly linear pattern. Nevertheless, there exists a noteworthy and favourable association with LEV ($p = 0.0447$), suggesting that bigger companies may use a greater amount of debt in their overall financial framework. The Spearman correlation coefficient measures the strength and direction of monotonic relationships between variables, providing valuable insights that go beyond linear patterns.

The correlation analysis reveals that leverage has a noteworthy negative association with ROA ($p = -0.1842$) and a positive correlation with FZ ($p = 0.0447$). This highlights the possible influence of leverage on both profitability and the size of the business. The inverse relationship with ROA indicates that more leverage is linked to decreased return on assets. The Spearman correlation is adept at recognising non-linear connections that the Pearson correlation may overlook.

The observed negative association between OC and ROA ($p = -0.0698$) indicates that a decrease in the length of the operating cycle is linked to an increase in the return on

assets. The Spearman correlation is a useful tool for analysing monotonic connections, which may reveal patterns that may not be easily seen using linear correlations.

The data reveals a significant positive association ($p = 0.3284$) between SG and OC, suggesting that an increase in sales growth is linked to a longer operating cycle. The Spearman correlation captures the link between sales growth and operational variables, providing a nuanced knowledge of their influence.

The Spearman correlation analysis indicates that there are no statistically significant connections between GDP and other variables at the 1%, 5%, or 10% significance levels. These findings indicate that there may not be a consistent association between GDP and the financial and operational factors seen in the consumer goods sector across the analysed period.

InfR has insignificant correlations with the majority of variables, with the exception of a substantial negative correlation with ExcR ($p = -0.3576$) at a significance level of 1%. Consequently, elevated inflation rates might potentially lead to decreased exchange rates, which can have a significant effect on enterprises involved in global commerce.

The Spearman correlation matrix reveals a combination of statistically significant and non-significant correlations for ExcR. It is worth mentioning that there is a strong negative relationship with ROA ($p = -0.1308$) and a positive relationship with LEV ($p = 0.1152$) at a significance level of 10%. Companies operating in a context with elevated exchange rates are likely to encounter reduced profitability and increased debt.

The results of the Pearson and Spearman correlation coefficient matrix for the listed companies indicate that there is no existence of multicollinearity between the independent variables. The maximum correlation coefficient of 0.6036 and 0.7939 is found between ExcR and InfR. This implies that there is an absence of multicollinearity among the variables in the study. Hence, an additional test was carried out to affirm and be sure that there is no multicollinearity among the explanatory variables. The utilisation of the VIF test was employed to confirm the lack of multicollinearity among the independent variables, as recommended by Mayer (1990:297). Table 6.4 below presents the VIF results.

Table 6.4: Test for multicollinearity of the consumer goods sector using VIF

Variable	VIF	1/VIF
FZ	2.00	0.500410
LEV	2.60	0.384732
OC	1.60	0.624922
SG	1.09	0.921535
GDP	1.29	0.773800
InfR	2.93	0.340970
ExcR	2.97	0.336264
Mean VIF	2.07	

Source: Research computation using STATA 14

Multicollinearity is a situation in which two or more regression variables are highly correlated, meaning that one can linearly predict the others with a certain degree of accuracy. Mayer (1990:297) suggested that when the VIF value is greater than 10, there is a strong indication of the presence of multicollinearity. Table 6.4 above presents the results of the VIF of the sample companies under the consumer goods sector considered in the study, which reveals a value less than 10. This signifies the absence of multicollinearity among the explanatory variables. This means that the study can rely on the regression coefficient to predict the level of impact of explanatory (independent) variables on the outcome (dependent) variables.

6.2.3 Hausman test of the consumer goods sector

The Durbin-Wu-Hausman test is a statistical hypothesis test in econometrics named after James Durbin, De-Min Wu, and Jerry Hausman, in which the test evaluates the consistency of an estimator when compared to an alternative, less efficient estimator that is already known to be consistent (Alajlani, 2019:47). The Hausman test can be used to differentiate between a fixed-effects (FE) model and a random effects (RE) model in panel analysis. An RE model is preferred under the null hypothesis because of its higher efficiency, while the alternative FE model is at least as consistent and thus preferred. In order to choose the best model between the FE and RE estimates in the study, a

Hausman specification test was carried out. This test only refers to ROA and CR as the dependent variables for the study; this is because it detects the endogenous (dependent) regressors in a regression model. The summary of the Hausman test for the sample consumer goods companies that were taken into consideration is provided below:

Table 6.5: Summary of Hausman test result for the consumer goods sector

Variables	Chi2	P-value
ROA	2.96	0.5639
CR	0.33	0.9878

Source: Research computation using STATA 14

Decision rule:

H_0 : Random effect model is preferable to fixed effect model.

H_1 : Fixed effect model is preferable to random effect model.

When Chi-square probability value is less than 10, reject H_0 and accept H_1 .

When Chi-square probability value is greater than 10, accept H_0 and reject H_1 .

The Hausman test result in Table 6.5 above shows interpretation of the results for the sample companies listed under the consumer goods sector.

The results reveal a Chi-square value of 2.96 and a p-value of 0.5639 for ROA. This means that the Chi-squared p-value is greater than 10% significant, which reveal a lack of statistical significance. Based on the decision rule, the researcher accepts the random effect model and rejects the fixed effect model. After reporting the Hausman test for ROA and accepting the random effect model, the researcher estimates the Breusch and Pagan Lagrangian multiplier test for random effect, which is statistically significant. This is reported in the next table.

Lastly, CR reveals a Chi-square value of 0.33 and a p-value of 0.9878. This implies that the p-value is also greater than 10%. Based on the decision rule, the study accepted the

random effect model and rejected the fixed effect model. Finally, after reporting the Hausman test for CR and accepting the random effect model, the researcher also estimates the Breusch and Pagan Lagrangian multiplier test for random effect and finds out that it is also statistically significant, which is also reported in the next table.

Table 6.6: Breusch and Pagan Lagrangian multiplier test for random effects for the consumer goods sector

Variables	Chi2	P-value
ROA	0.10	0.0000
CR	0.07	0.0000

Source: Research computation using STATA 14

Table 6.6 above shows the results of the Breusch and Pagan Lagrangian multiplier test for random effects on ROA and CR of the sample companies under the consumer goods sector. The results reveal a Chi-square of 0.00 and a p-value of 0.000, respectively. This shows a significant value. Therefore, the research extracted and interpreted the random effect model for ROA and CR respectively.

6.2.4 Regression result of the consumer goods sector

Regression is a statistical technique widely applied by researchers in many fields to describe the nature of the relationship between variables (Foong *et al.* 2018:2). According to Chayalakshmi *et al.* (2018:1), regression analysis is a widely used method of statistical technique for modelling the relationship between variables. Regression analysis has numerous applications in every field, such as economics, management, social sciences, and others. Regression analysis is a common technique in market research that helps the analyst understand the relationship between independent variables and dependent variables. More specifically, it focuses on how the dependent variable changes in relation to changes in the independent variables. Tables 6.7 and 6.8 below present the regression results for the sample companies listed in the consumer goods sector considered in the study for the period under review.

Table 6.7: Summary of multiple regression analysis showing the relationship between ROA and independent variables of the consumer goods sector

Variables	Coefficient	P-value
Constants	0.9554531	0.097
FZ	-0.0788715	0.186
LEV	0.0000066	0.995
OC	-0.0016725	0.068*
SG	0.0294339	0.856
GDP	-0.0293001	0.149
InfR	0.0055074	0.784
ExcR	-0.0000099	0.990
R-Squared	0.4201	0.1068

NB: 1%, 5%, 10% levels of significance are represented by ***, **, and *, respectively

Source: Research computation using STATA 14

The results of multiple regression analysis for the variables determining the financial performance proxy by ROA of the sample companies in the consumer goods sector is presented in Table 6.7 above.

The results of the analysis reveal an R-squared value of 0.4201 which suggests that the model accounts for about 42.01% of the variation in ROA. Consequently, the collective independent variables included in the analysis provide a modest degree of explanatory capability for the fluctuations in ROA within the consumer goods sector.

The coefficient of -0.0788715 indicates a negative relationship between FZ and ROA. Nevertheless, the association lacks statistical significance (p-value = 0.186 at the 10% significance level). This indicates that, in this particular model, the only factor of business size does not have a significant and consistent effect on ROA.

The coefficient of LEV is 0.0000066, which is very little. The p-value associated with LEV is 0.995. These results suggest that there is no statistically significant link between LEV and ROA at the 10% significance level. Therefore, in the consumer goods sector, the degree of leverage does not have a substantial impact on explaining fluctuations in ROA.

The correlation coefficient for the OC is -0.0016725, indicating that there is a negative relationship between the length of the OC and the ROA. In other words, a shorter OC is linked to a higher ROA. The p-value of 0.068 shows a statistically significant impact at 10% significance threshold. Consequently, companies that have shorter operational cycles are likely to see greater returns on their assets.

The presence of a positive coefficient of 0.0294339 for SG indicates that there is a direct relationship between greater SG and better ROA. Nevertheless, the p-value of 0.856 indicates that there is no statistically significant link at the 10% significance level. Consequently, the data does not provide evidence to support the notion that SG has a significant influence on ROA in this particular model.

The coefficient for GDP is -0.0293001, suggesting a possible negative correlation with ROA. The p-value of 0.149 indicates that there is no statistically significant link at the 10% significance level. Therefore, in this model, GDP alone does not effectively account for fluctuations in ROA.

The coefficient of 0.0055074 for InfR indicates a positive correlation with ROA. The p-value of 0.784 suggests that there is no statistically significant link at the 10% significance level. Consequently, in this particular model, the InfR does not have a substantial influence on the ROA.

Lastly, the coefficient for ExcR is -0.0000099, suggesting that there is no statistically significant correlation with ROA. This is supported by a p-value of 0.990 at the 10% significance level. This indicates that ExcR have little impact on explaining fluctuations in ROA within the consumer goods sector.

Table 6.8: Summary of multiple regression analysis showing the relationship between CR and independent variables of the consumer goods sector

Variables	Coefficient	P-value
Constants	-0.0850208	0.867
FZ	0.0832572	0.114
LEV	-0.034887	0.076*
OC	0.0029002	0.000***
SG	-0.2310963	0.108*
GDP	0.0190342	0.288
InfR	-0.0132454	0.455
ExcR	0.0011576	0.115
R-Squared	0.7364	0.0000

NB: 1%, 5%, 10% levels of significance are represented by ***, **, and * respectively

Source: Research computation using STATA 14

The results of multiple regression analysis for the variables influencing the working capital management of listed consumer goods companies in Nigeria using CR as a proxy are summarised in Table 6.8 above.

The R-squared value of 0.7364 indicates that about 73.64% of the variation in the CR can be accounted for by the independent variables included in the analysis. This indicates a pretty high degree of explanatory capacity, suggesting that the model offers useful insights into the variables that influence the CR in the consumer goods sector.

FZ refers to the magnitude of a company and is quantified by its financial leverage ratio. The coefficient for FZ is 0.0832572, indicating a positive correlation with the dependent variable (current ratio). Meanwhile, this association does not exhibit statistical significance at the 10% significance level (p-value = 0.114).

LEV is the measure of how much debt a company includes in its capital structure. The coefficient for LEV is -0.034887, suggesting a possible inverse correlation with the CR. Although there is a negative correlation indicating that increased leverage is linked to a lower CR, this connection is only somewhat significant at the 10% level (p-value = 0.076).

The OC is the duration it typically takes for a company to transform its inventory into cash. The coefficient for OC is 0.0029002, and its p-value of 0.000 suggests a very significant and strong positive association with the CR. Companies that have longer OC often have greater CR.

SG refers to the percentage change in a company's sales within a certain time frame. The coefficient for SG is -0.2310963, indicating a negative correlation with the CR. Ultimately, the correlation between these variables is somewhat significant at the 10% significance level, as shown by a p-value of 0.108.

GDP is a measure that quantifies the total economic output of a nation. The coefficient for GDP is 0.0190342, suggesting a direct correlation with the CR. However, this association lacks statistical significance at the 10% significance level (p-value = 0.288).

InfR is a metric that quantifies the pace at which prices are rising in the economy. The coefficient for InfR is -0.0132454, indicating a negative correlation with the CR. Nevertheless, this adverse correlation lacks statistical significance at the 10% significance level (p-value = 0.455).

The ExcR is a measure of the value of one country's currency in relation to another. The coefficient for ExcR is 0.0011576, indicating a positive correlation with the CR. Meanwhile, this favourable correlation lacks statistical significance at the 10% significance level (p-value = 0.115).

This concludes the data presentation and analysis of the results of the consumer goods sector. The next section presents and discuss the results of the financial sector.

6.3 Results of the financial sector

This section presents and discusses the descriptive statistics, correlation matrix, multicollinearity test, Hausman test, and lastly, regression results of the sample companies listed in the financial sector.

6.3.1 Descriptive statistics of the financial sector

The table below summarises the descriptive statistics showing the mean, standard deviation, minimum, maximum, skewness and kurtosis values of the sample companies listed under the financial sector in Nigeria.

Table 6.9: Summary of descriptive statistics for the financial sector

Variables	Observations	Mean	Standard deviation	Minimum	Maximum	Skewness	Kurtosis
ROA	410	0.0255	0.0757	-0.5272	0.3020	-1.0961	14.1603
CR	410	1.5987	1.6532	0.0529	12.1152	3.0988	14.1369
FZ	410	7.5267	1.1538	4.5537	10.2099	0.5146	3.2067
LEV	410	0.5983	0.3901	0.0037	2.5622	1.5565	8.3314
OC	410	79.734	91.8444	0	460.5474	1.3428	4.3488
SG	410	0.1222	0.6042	-0.8268	10.8362	13.7369	242.87
GDP	410	2.4060	2.6936	-1.7900	6.6700	-0.0193	2.1857
InfR	410	13.281	4.1067	8.0600	21.3400	0.4083	2.1783
ExcR	410	297.64	99.7287	157.31	448.90	-0.0890	1.6800

Source: Research computation using STATA 14

The data shown in Table 6.9 provides descriptive statistics for several variables in the financial sector. It offers insights into the central trends, dispersion, and form of their distributions.

The financial sector has a mean Return on Assets (ROA) of 0.0255, which suggests a moderate positive average return. The small standard deviation of 0.0757 indicates that there is not much variation in the performance of different companies. The lowest return on assets (ROA) seen is -0.5272, while the highest is 0.3020. The presence of a negative skewness (-1.0961) and high kurtosis (14.1603) suggests that the distribution is

negatively skewed and has large tails, indicating the possibility of outliers on the lower end of ROA. The presence of negative skewness indicates that the distribution is asymmetrically skewed towards the left, with a longer tail on the left side and a clustering of values on the right side. The presence of a high positive kurtosis indicates the existence of outliers at both ends of the distribution, especially towards the lower end. These outliers might indicate organisations experiencing financial difficulties or exceptional situations that adversely affect their asset returns.

The average Current Ratio (CR) of 1.5987, indicating that, on average, companies in the financial sector own somewhat more current assets compared to current liabilities. Nevertheless, the considerable standard deviation of 1.6532 indicates a noteworthy amount of variation in liquidity situations across the examined organisations, with values ranging from 0.0529 to 12.1152. The wide range of values reflects the presence of varied liquidity profiles across enterprises in the financial sector. The CR distribution has a positive skewness of 3.0988 and a kurtosis of 14.1369, indicating a right-skewed pattern with heavy tails. The positive skewness signifies a larger tail on the right side of the distribution, suggesting the existence of companies with unusually high current ratios. The presence of outliers with values much greater than the mean is indicated by the strong positive kurtosis, resulting in heavy tails. These outliers might indicate organisations that have extraordinarily robust liquidity balances, either as a result of prudent financial management or distinctive sector characteristics.

The variable Firm Size (FZ), has an average value of 7.5267 and a standard deviation of 1.1538. This indicates a considerable range of differences in the sizes of the firms that were observed. The skewness coefficient of 0.5146 suggests a distribution that is skewed to the right, meaning that there is a larger tail on the right side. The kurtosis value of 3.2067 indicates that the distribution of firm sizes has relatively heavy tails, suggesting the presence of outliers that contribute to the tails. The presence of positive skewness suggests the existence of financial sector companies with above-average firm sizes, perhaps attributed to their capital structures including elevated amounts of debt. The existence of outliers in the distribution of firm sizes is suggested by the somewhat heavy tails, as shown by the kurtosis.

The average leverage in the financial sector is 0.5983, indicating a modest degree of leverage across the analysed companies. In this sense, leverage refers to the degree to which corporations use debt in their capital structure. The standard deviation of 0.3901 reflects the extent of variation in leverage levels, with values that span from 0.0037 to 2.5622. The observed diversity indicates that some companies in the financial sector choose to use a more cautious capital structure, depending on a lower amount of debt. In contrast, other companies may choose a more assertive strategy with greater levels of leverage. The skewness value of 1.5565 shows that the distribution is favourably skewed. This indicates the presence of an asymmetrical distribution, characterised by a larger tail on the right side. Within the framework of leverage, this indicates the existence of companies with leverage levels that are greater than the norm, which may indicate a tendency to rely on debt financing in their capital structures. The kurtosis value of 8.3314 indicates that the leverage distribution contains tails that are somewhat heavy. This suggests that there are firms that have leverage levels that differ from the average to a moderate degree. The presence of heavier tails in the distribution may signal the existence of outliers, indicating that some companies in the financial sector exhibit much greater or lower leverage than the norm.

The average operating cycle is 79.734, which indicates the typical length of the operating cycle for the enterprises under observation. The operating cycle is a metric that quantifies the duration required for a company to transform its raw resources into cash by means of its operational procedures. Nevertheless, the very large standard deviation of 91.8444 suggests significant variation in the lengths of operational cycles across companies in the financial sector. This implies that some companies have much longer operating cycles compared to the average, maybe as a result of the characteristics of their company operations or industry-specific influences. The operational cycle lengths have a positive skewness of 1.3428, indicating a favourably skewed distribution. This indicates the presence of an asymmetrical distribution, characterised by a larger tail on the right side. Within the operational cycle framework, this indicates the existence of companies that have longer-than-average durations for their cycles, which in turn contributes to the positive skewness. The kurtosis value of 4.3488 indicates that the distribution of operating cycles contains tails that are relatively heavy. This suggests that there are companies

whose operating cycle lengths differ from the average to a substantial degree, perhaps reflecting industry-specific differences or distinct operational features.

The financial sector has a favourable overall pattern of increasing sales, as shown by the average sales growth rate of 0.1222. Nevertheless, there exists considerable disparity in the rates of sales growth across companies, as seen by the huge standard deviation of 0.6042. The variability observed indicates that companies operating in the financial sector undergo distinct swings in sales, which are impacted by variables such as market dynamics, economic situations, or specialised company strategies. The wide spectrum of sales growth figures, ranging from -0.8268 to 10.8362, highlights the varied growth rates seen across firms in the financial sector. The variety might be ascribed to disparities in company structures, market segmentation, or reactions to external forces affecting the financial sector. The skewness value of 13.7369 suggests a distribution that is strongly skewed to the right, implying the existence of outliers with very high sales growth rates. The presence of extreme positive numbers contributes to the skewness, indicating the existence of firms who have had significant sales growth beyond the average. Furthermore, the very high kurtosis value of 242.87 emphasises the existence of outliers with exceptionally high sales growth rates, as seen by the hefty tails in the distribution.

The mean Gross Domestic Product (GDP) of 2.4060 provides valuable understanding of the economic context under which financial sector companies function. GDP is a crucial metric that provides insights into the overall economic well-being and has the potential to impact several facets of financial operations, such as investment choices, access to credit, and corporate growth plans. A higher average GDP often indicates a stronger economic climate, which creates favourable conditions for financial firms to prosper. The standard deviation of 2.6936 indicates the extent of variation in economic circumstances during the examined time. The variety seen suggests that companies in the financial sector can adapt to various economic conditions, including both times of economic expansion and downturn. The skewness value of -0.0193 indicates that the distribution is almost symmetrical. Within the framework of GDP, this signifies a very equitable allocation of economic circumstances, devoid of any significant bias towards either expansion or contraction. The kurtosis value of 2.1857 indicates that the distribution has

relatively heavy tails. These tails may be altered by variables such as financial crises, policy changes, or foreign shocks impacting the wider economy.

The mean inflation rate of 13.281 is the average rate at which prices have increased throughout the examined time. Inflation is a crucial economic metric that impacts the capacity of consumers to buy goods and services, the expenses associated with manufacturing, and the general stability of the economy. A greater mean inflation rate indicates a time of increasing prices, which might impact financial choices, investment approaches, and monetary policies. The investigated companies exhibit significant swings in inflation rates, as shown by the standard deviation of 4.1067. These differences emphasise the fluidity of inflationary pressures, affecting companies in different ways depending on their sector, business strategies, and susceptibility to inflation-sensitive variables. Companies working in volatile inflation settings may have more difficulties in financial planning and risk management. The skewness coefficient of 0.4083 indicates a distribution that is substantially right-skewed. The presence of skewness in the distribution suggests the existence of a minor rightward tail, indicating intermittent times of inflation rates that exceed the average. The kurtosis value of 2.1783 suggests that the distribution of inflation rates has moderate tails. This means that while there is some clustering around the average inflation rate, there are also instances of more severe inflationary situations.

The average exchange rate of 297.64 offers an understanding of the typical value of the exchange rate in the financial sector. Exchange rates are of vital importance in the international trade operations of financial sector companies, as they affect their capacity to compete, make profits, and manage risks. A higher average exchange rate might suggest a more robust native currency or current economic circumstances that impact currency values, so influencing the competitiveness of exports and imports. The studied period exhibits variety in exchange rates, as shown by the standard deviation of 99.7287. The unpredictability of currency rates may have substantial ramifications for enterprises involved in international commerce. Abrupt variations in exchange rates can affect the cost of imported products, the value of foreign investments, and the competitiveness of exports. The skewness value of -0.0890 suggests that the distribution is almost

symmetrical, but with a tiny leftward skew. The skewness of the distribution indicates that there is a small left tail, suggesting infrequent periods of exchange rates that are lower than the average. The kurtosis value of 1.6800 indicates that the distribution has somewhat heavy tails. This shows that while there is some clustering of values around the mean exchange rate, there are also instances of more extreme values.

6.3.2 Correlation matrix of financial sector

The table below presents a summary of the correlation results for the sample companies listed in the financial sector.

Table 6.10: Summary of Pearson correlation matrix for the financial sector

	ROA	CR	FZ	LEV	OC	SG	GDP	InfR	ExcR
ROA	1.0000								
Sig									
CR	0.3150	1.0000							
Sig	0.0000								
FZ	-0.0518	0.0752	1.0000						
Sig	0.2955	0.1286							
LEV	-0.4549	-0.2464	0.1492	1.0000					
Sig	0.0000	0.0000	0.0025						
OC	-0.0118	0.0328	0.0846	0.1528	1.0000				
Sig	0.8123	0.5078	0.0873	0.0019					
SG	0.2405	0.0310	-0.0344	-0.0929	-0.0038	1.0000			
Sig	0.0000	0.5309	0.4869	0.0603	0.9385				
GDP	-0.0105	-0.0267	-0.0334	-0.0736	-0.0673	-0.0533	1.0000		
Sig	0.8314	0.5899	0.5001	0.1368	0.1739	0.2814			
InfR	0.0204	-0.0297	0.0372	0.0940	0.1175	0.1009	-0.4021	1.0000	
Sig	0.6812	0.5488	0.4530	0.0572	0.0173	0.0412	0.0000		
ExcR	0.0268	-0.0145	0.0519	0.1349	0.1713	0.0689	-0.4081	0.6036	1.0000
Sig	0.5880	0.7699	0.2947	0.0062	0.0005	0.1635	0.0000	0.0000	

Source: Research computation using STATA 14

The Pearson correlation matrix for the financial sector is shown in Table 6.10 above. It reveals the connections between financial variables and their corresponding significance levels.

The results shows that there is a positive connection between ROA and CR with a correlation coefficient of 0.3150 and a p-value of 0.0000. This indicates that when ROA grows, there is a propensity for CR to likewise increase. This suggests that organisations with better returns on assets are likely to have more advantageous liquidity situations. Similarly, there is a significant positive association with SG (0.2405, $p=0.0000$), indicating that stronger sales growth is linked to better returns on assets. Furthermore, the ROA has a negative correlation of -0.4549 with the LEV variable, with a p-value of 0.0000. This suggests that increased leverage is linked to decreased returns on assets. Finally, there are no substantial connections between ROA and FZ, OC, GDP, InfR, or ExcR, indicating that these factors may have little effect on ROA in the financial sector.

The correlation coefficient CR has a positive relationship with the ROA with a value of 0.3150 and a p-value of 0.0000. This suggests that organisations with higher current ratios generally experience greater returns on their assets. Furthermore, there exists a significant positive association between SG (0.0310, $p=0.0000$), indicating that an increase in sales growth is linked to an increase in current ratios. In addition, there is a negative connection between CR and LEV (-0.2464, $p=0.0000$), indicating that greater current ratios are linked to lesser leverage. Ultimately, there are no notable associations with FZ, OC, GDP, InfR, or ExcR, suggesting that these factors may have little impact on CR in the financial sector.

FZ has no statistically significant relationships with any of the variables, indicating that firm size may not have a substantial relationship with ROA, CR, LEV, OC, SG, GDP, InfR, or ExcR in the financial sector.

The variable LEV has a negative correlation with ROA (-0.4549, $p=0.0000$), suggesting that more leverage is linked to worse returns on assets. Furthermore, there exists a negative association with CR (-0.2464, $p=0.0000$), indicating that increased leverage is

linked to decreased current ratios. There are no noteworthy associations with FZ, OC, SG, GDP, InfR, or ExcR, suggesting that these factors may have a weak impact on LEV in the financial sector.

The OC does not exhibit any notable correlations with the variables, indicating that there may not be a strong relationship between the OC and ROA, CR, FZ, SG, GDP, InfR, or ExcR in the financial sector.

The data shows a positive correlation between SG and both ROA (0.2405, $p=0.0000$) and CR (0.0310, $p=0.0000$). This means that better sales growth is linked to higher returns on assets and higher current ratios. The connection between ExcR and sales growth in the financial sector is not statistically significant, with a negative coefficient of -0.0038 ($p=0.9385$). This indicates that there is no substantial relationship between exchange rates and sales growth.

The analysis also reveals that there are no substantial associations between GDP and any of the variables, indicating that GDP may not have a big impact on ROA, CR, FZ, LEV, OC, SG, InfR, or ExcR within the financial sector.

The InfR has a negative correlation with the ExcR of -0.4021, with a p-value of 0.0000. This suggests that higher inflation rates are linked to lower exchange rates. The absence of any notable relationships with ROA, CR, FZ, LEV, OC, SG, or GDP implies that these factors may have little impact on InfR within the mentioned sector.

The variable ExcR has a negative correlation of -0.4081 with LEV, with a p-value of 0.0000. This suggests that higher exchange rates are linked to lower levels of leverage. The absence of substantial relationships with ROA, CR, FZ, OC, SG, or GDP suggests that these factors may have little effect on ExcR in the financial sector.

The next table presents a summary of the Spearman correlation results of the sample companies in the financial sector considered in the study.

Table 6.11: Summary of Spearman correlation matrix for the financial sector

	ROA	CR	FZ	LEV	OC	SG	GDP	InfR	ExcR
ROA	1.0000								
Sig									
CR	0.3336	1.0000							
Sig	0.0000								
FZ	0.0619	0.0818	1.0000						
Sig	0.2112	0.0980							
LEV	-0.3236	-0.3061	0.1559	1.0000					
Sig	0.0000	0.0000	0.0015						
OC	-0.0687	0.0903	-0.0113	0.2402	1.0000				
Sig	0.1649	0.0679	0.8189	0.0000					
SG	0.1424	0.0308	0.2123	-0.0219	0.0689	1.0000			
Sig	0.0039	0.5345	0.0000	0.6589	0.1639				
GDP	-0.0497	-0.0206	-0.0284	-0.0697	-0.0422	-0.0388	1.0000		
Sig	0.3154	0.6781	0.5661	0.1587	0.3938	0.4328			
InfR	0.0173	-0.0427	0.0666	0.0991	0.0624	0.1193	-0.3576	1.0000	
Sig	0.7271	0.3883	0.1785	0.0450	0.2076	0.0156	0.0000		
ExcR	0.0374	-0.0656	0.0860	0.1322	0.0848	0.1061	-0.2970	0.7939	1.0000
Sig	0.4500	0.1849	0.0820	0.0074	0.0862	0.0317	0.0001	0.0000	

Source: Research computation using STATA 14

The Spearman correlation coefficient matrix in Table 6.11 indicates that there are no statistically significant links between the return on assets (ROA) and the other factors examined in the research, namely in the financial sector. These findings indicate that the relationships between CR, FZ, LEV, OC, SG, GDP, InfR, and ExcR may not follow a linear trend, but may display more intricate patterns.

The correlation coefficient (CR) exhibits strong positive correlations with the stock growth (SG) and the exchange rate (ExcR) at a statistically significant level of 1%. The connections indicate that higher current ratios are linked to greater sales growth and higher exchange rates. Furthermore, there exists a negative association between LEV and current ratios, suggesting that greater current ratios are associated with lower levels of leverage.

The Spearman correlation matrix indicates that there are no statistically significant relationships between the variable FZ and any other variables examined in the research. The absence of substantial correlations suggests that company size does not have a direct link with variables such as return on assets (ROA), current ratio (CR), leverage (LEV), operating cash flow (OC), sales growth (SG), gross domestic product (GDP), inflation rate (InfR), and exchange rate (ExcR).

The analysis reveals notable inverse relationships between LEV and both ROA and CR, suggesting that increased leverage is linked to decreased returns on assets and reduced current ratios. There were no notable relationships found between Leverage and any other factors.

The research found that there were no significant relationships between the factors and OC. The absence of substantial correlations indicates that the operational cycle does not display any connections with variables such as return on assets (ROA), current ratio (CR), financial leverage (FZ), sales growth (SG), gross domestic product (GDP), inflation rate (InfR), or exchange rate (ExcR).

The Spearman correlation matrix indicates strong positive relationships between SG and both ROA and CR. These associations indicate that there is a positive correlation between increased sales growth and greater returns on assets, as well as higher current ratios. Additionally, there is a somewhat significant inverse connection with ExcR, suggesting a possible link between increased sales growth and decreased exchange rates.

The GDP has no substantial connections with the other variables. The absence of notable correlations indicates that GDP does not display any direct connections with variables such as ROA, CR, FZ, LEV, OC, SG, InfR, or ExcR.

The InfR variable has a notable inverse association with ExcR, indicating that greater inflation rates are linked to lower exchange rates. The investigation did not find any significant connections between InfR and the other factors.

Finally, the Spearman correlation matrix reveals a noteworthy inverse association between ExcR and LEV, indicating that higher exchange rates are linked to reduced leverage. Furthermore, there is a significant and positive association with InfR, suggesting that elevated exchange rates are linked to elevated inflation rates. There were no notable associations found between ExcR and any other variables.

The results of Pearson and Spearman correlation coefficient matrix for the listed companies under the financial sector indicate that there is no existence of multicollinearity between the independent variables, showing that the maximum correlation coefficient of 0.6036 and 0.7939 is found between interest rate and exchange rate, which implies that there is an absence of multicollinearity among the variables in the study. Hence, the VIF test was carried out to affirm the absence of multicollinearity. This is presented in the table below.

Table 6.12: Test for multicollinearity of the financial sector using VIF

Variable	VIF	1/VIF
FZ	1.03	0.972646
LEV	1.07	0.937092
OC	1.05	0.949296
SG	1.02	0.978215
GDP	1.22	0.817045
InfR	2.90	0.345361
ExcR	2.96	0.337794
Mean VIF	1.61	

Source: Research computation using STATA 14

Table 6.12 above presents the result of the VIF of the sample companies under the financial sector, which reveals a value of less than 10. This signifies the absence of multicollinearity among the independent variables, which means that the study can rely on the regression results to predict the impact of independent variables on dependent variables for the sample companies listed in the financial sector.

6.3.3 Hausman test of the financial sector

The table below shows the summary of Hausman test results for the sample companies listed in the financial sector considered in the study for the period under consideration.

Table 6.13: Summary of Hausman test result for the financial sector

Variables	Chi2	P-value
ROA	0.20	0.9951
CR	0.01	1.0000

Source: Research computation using STATA 14

Decision rule:

H_0 : Random effect model is preferable to fixed effect model.

H_1 : Fixed effect model is preferable to random effect model.

When Chi-square probability value is less than 10, reject H_0 and accept H_1 .

When Chi-square probability value is greater than 10, accept H_0 and reject H_1 .

Table 6.13 above shows the summary of Hausman test results for the sample companies listed under the financial sector. The results show a Chi-square value of 0.20 and a p-value of 0.9951 for ROA. This implies that the Chi-squared p-value is greater than 10% significant. Based on the decision rule, the researcher accepts the random effect model and rejects the fixed effect model.

Lastly, CR reveals a Chi-square value of 0.01 and a p-value of 1.0000. This implies that the p-value is also greater than 10%. Therefore, the study accepted the random effect model and rejected the fixed effect model. After reporting the Hausman test results, Breusch and Pagan's Lagrangian multiplier test for random effect was estimated for ROA and CR to test for the significance of the variables. The results of the Breusch and Pagan Lagrangian multiplier test for random effects model for ROA and CR reported a significant value. This is presented in the table below.

Table 6.14: Breusch and Pagan Lagrangian multiplier test for random effects for the financial sector

Variables	Chi2	P-value
ROA	0.00	0.0000
CR	0.00	0.0000

Source: Research computation using STATA 14

Table 6.14 above shows the results of the Breusch and Pagan Lagrangian multiplier test for random effects on ROA and CR of the sample companies in the financial sector. The results reveal a Chi2 of 0.00 and a p-value of 0.0000, respectively. This shows a significant value. Hence, the researcher estimates and interprets the RE regression model results for ROA and CR.

6.3.4 Regression result of the financial sector

Tables 6.15 and 6.16 below present the regression results for the sample companies in the financial sector.

Table 6.15: Summary of multiple regression analysis showing the relationship between ROA and independent variables of the financial sector

Variables	Coefficient	P-value
Constants	0.0539897	0.032
FZ	0.00101	0.724
LEV	-0.0884535	0.000***
OC	0.0000371	0.308
SG	0.0245967	0.000***
GDP	-0.0002175	0.871
InfR	-0.0008469	0.531
ExcR	0.0000759	0.177
R-Squared	0.5619	0.0000

NB: 1%, 5%, 10% levels of significance are represented by ***, **, and *, respectively

Source: Research computation using STATA 14

Table 6.15 displays the results of the multiple regression analysis conducted on ROA in the financial sector, providing valuable insights. The constant term, which represents the intercept, is determined to have statistical significance with a p-value of 0.032. This suggests that there is a minimum level of return on assets when all independent variables have a value of zero. The R-squared value of 0.5619 suggests that about 56.19% of the variation in ROA can be accounted for by the independent variables included in the analysis.

The coefficient for FZ is 0.00101, indicating a direct correlation with ROA. Meanwhile, the p-value of 0.724 above the significance threshold of 0.10, suggesting that there is no statistical relevance between FZ and the prediction of ROA in the financial sector. This simply means, changes in FZ do not have a substantial influence on ROA.

The variable LEV has a substantial negative coefficient of -0.0884535, accompanied by a very low p-value of 0.000. There is a robust and statistically significant inverse correlation between LEV and ROA. Companies that have a greater degree of leverage tend to have worse returns on their assets.

The coefficient for the OC is 0.0000371, suggesting a direct correlation with ROA. Nevertheless, the p-value of 0.308 above the threshold of 0.10, indicating that the OC does not possess statistical significance in forecasting the ROA. Therefore, fluctuations in the length of the OC do not have a substantial influence on the ROA.

The coefficient for SG is 0.0245967, indicating a strong positive relationship. The p-value associated with this coefficient is extremely low at 0.000. There is a robust and statistically significant correlation between the increase in sales and the return on assets. Companies that are seeing increased sales growth often exhibit better returns on assets.

The GDP has a coefficient of -0.0002175, indicating a negative correlation with ROA. Although, the p-value of 0.871 above the threshold of 0.10, suggesting that there is no statistical significance in using GDP to predict ROA. There seems to be no substantial influence of GDP fluctuations on the ROA.

The coefficient of the InfR is -0.0008469, indicating a negative correlation with ROA. Ultimately, the p-value of 0.531 above the threshold of 0.10, suggesting that the InfR does not possess statistical significance in forecasting the ROA. There is little evidence to suggest that changes in inflation rates are major indicators of return on assets.

The ExcR has a coefficient of 0.0000759, suggesting a direct correlation with ROA. Nevertheless, the p-value of 0.177 above the threshold of 0.10, indicating that ExcR does not possess statistical significance in predicting ROA. Fluctuations in currency exchange rates do not seem to have a substantial effect on the return on assets.

Table 6.16: Summary of multiple regression analysis showing the relationship between CR and independent variables of the financial sector

Variables	Coefficient	P-value
Constants	1.256567	0.040
FZ	0.1574668	0.023**
LEV	-1.161262	0.000***
OC	0.0011386	0.197
SG	0.0304724	0.818
GDP	-0.0304435	0.348
InfR	-0.0277247	0.397
ExcR	0.0006675	0.625
R-Squared	0.5739	0.0000

NB: 1%, 5%, 10% levels of significance are represented by ***, **, and * respectively

Source: Research computation using STATA 14

The multiple regression analysis conducted on the financial sector in Table 6.16 offers important insights into the correlation between the CR and the independent variables in the study. The constant term, shown by the intercept, is statistically significant with a p-value of 0.040, indicating the presence of a baseline current ratio when all independent variables are equal to zero. The R-squared value of 0.5739 suggests that about 57.39% of the variation in CR can be accounted for by the independent variables included in the analysis.

The variable FZ has a substantial positive coefficient of 0.1574668, accompanied by a p-value of 0.023. Therefore, it can be concluded that the size of a company has a statistically significant and favourable effect on the current ratio. As companies get larger, there is a tendency for their current ratio to rise as well.

The variable LEV shows a strong negative correlation with a coefficient of -1.161262, which is highly significant with a p-value of 0.000. There is a robust and statistically significant inverse correlation between leverage and the current ratio. In the financial sector, which means that there is a negative correlation between higher leverage and current ratios.

The coefficient for the OC is 0.0011386, and the p-value is 0.197. Despite the positive coefficient, the p-value beyond 0.10 indicates that OC does not have statistical significance in predicting the current ratio. Modifications in the operational cycle do not seem to have a substantial influence on the current ratio.

The SG coefficient is 0.0304724, indicating a positive relationship. However, the high p-value of 0.818 suggests that this relationship is not statistically significant. These findings suggest that the variable SG lacks statistical significance in its ability to forecast the current ratio. This implies that fluctuations in sales growth are not meaningful indicators of the current ratio.

The GDP coefficient is -0.0304435, with a p-value of 0.348. Like OC and SG, GDP does not exhibit statistical significance in forecasting the current ratio. There is no apparent correlation between fluctuations in GDP and the current ratio.

The coefficient for the InfR is -0.0277247, and the p-value is 0.397. Similar to OC, SG, and GDP, InfR lacks statistical significance in its ability to forecast the current ratio. The current ratio is not significantly predicted by changes in inflation rates.

The ExcR coefficient is 0.0006675, with a p-value of 0.625. The statistical analysis shows that ExcR does not have a significant predictive power for the current ratio. This suggests that fluctuations in exchange rates do not have a substantial influence on the current ratio.

This concludes the data presentation and analysis of the results of the financial sector. The next section presents and discusses the results of the oil and gas sector.

6.4 Results of the oil and gas sector

This section also presents and discusses the descriptive statistics, correlation matrix, multicollinearity test, Hausman test, and, in the end, regression results of the sample companies listed under the oil and gas sector.

6.4.1 Descriptive statistics of the oil and gas sector

The table below summarises the descriptive statistics showing the mean, standard deviation, minimum, maximum, skewness and kurtosis values of the sample companies

listed under the oil and gas sector in Nigeria. The reason for selecting the companies was the availability of data.

Table 6.17: Summary of descriptive statistics for the oil and gas sector

Variables	Observations	Mean	Standard deviation	Minimum	Maximum	Skewness	Kurtosis
ROA	80	0.0228	0.2020	-0.5573	1.5131	4.6135	39.2182
CR	80	1.4797	0.8715	0.3637	5.8895	2.6690	11.9706
FZ	80	7.2576	0.8115	5.3014	8.3196	-0.9889	2.4713
LEV	80	0.6748	0.2828	0.1522	2.2223	2.9669	16.4682
OC	80	111.71	53.9926	0	273.2328	0.4438	3.8614
SG	80	0.0247	0.4560	-1	1.4551	0.4573	3.6584
GDP	80	2.4060	2.7073	-1.7900	6.6700	-0.0193	2.1857
InfR	80	13.281	4.1275	8.0600	21.3400	0.4083	2.1783
ExcR	80	297.64	100.236	157.31	448.90	-0.0890	1.6800

Source: Research computation using STATA 14

Table 6.17 presents descriptive statistics for the sample oil and gas companies listed under the oil and gas sector in Nigeria. As it is displayed in the table, the oil and gas sector has a mean Return on Assets (ROA) of 0.0228, suggesting that firms in this industry typically produce a very low return on their assets. The presence of a standard deviation of 0.2020 indicates that there is a certain level of diversity in the performance of different companies within the sector. The variability observed suggests that some firms are capable of attaining notably larger returns on their assets, whilst others may encounter lower returns. The presence of a minimal return on assets (ROA) value of -0.5573 indicates that some firms within the sector are experiencing negative returns. This signals the possibility of financial difficulties or inefficiencies in the utilisation of assets.

Conversely, a maximum return on assets (ROA) of 1.5131 indicates enterprises with extraordinarily high profitability in relation to their assets. The ROA distribution has a significant positive skewness of 4.6135, indicating a strong rightward skew. Consequently, a small number of enterprises in the oil and gas industry exhibit very high Return on Assets (ROA), thus skewing the distribution towards the positive end. The kurtosis value of 39.2182 indicates that the distribution contains a significant prevalence of outliers with very high ROA, resulting in highly heavy tails. These outliers might indicate organisations that have attained exceptional success, perhaps as a result of distinct market circumstances, technical developments, or other distinctive causes.

The oil and gas industry has an average Current Ratio (CR) of 1.4797, indicating that firms in this sector typically have a current asset base that is somewhat larger than their current liabilities. Within this framework, a CR value greater than 1 indicates that, on average, enterprises within the oil and gas industry possess an adequate amount of current assets to fulfil their immediate financial responsibilities. The value of 0.8715 for the standard deviation indicates the extent of variation in liquidity situations across individual firms within the sector. The difference in current ratios across corporations suggests that some companies own greater current ratios, which implies better liquidity situations, while others have lower current ratios, signalling possible liquidity issues. The observed organisations exhibit a wide variety of liquidity management methods and financial health, as shown by the least CR of 0.3637 and the greatest CR of 5.8895. The positive skewness of 2.6690 suggests that the distribution of Current Ratios is skewed to the right, indicating that there are more firms with CR values below the average, but with a few companies with much higher values. The presence of skewness in the data indicates that there are a few number of businesses in the oil and gas industry that have unusually robust liquidity situations. This has a significant impact on the distribution, causing higher current ratios. The kurtosis value of 11.9706 highlights the heavy-tailed distribution, suggesting the existence of outliers with very high or low current ratios.

The average Firm Size (FZ) of 7.2576 in the oil and gas sector indicates the typical level of business size in this industry. The standard deviation of 0.8115 indicates a moderate level of variability in the sizes of firms in the oil and gas industry, suggesting that there

are disparities in the volume of activities across these organisations. The standard deviation, being less than one, indicates that most enterprises are closely grouped around the mean, while there are still discernible differences in size. The distribution of Firm Size has a negative skewness of -0.9889, indicating that the tail of the distribution is tilted to the left. This indicates that there is a higher prevalence of enterprises with smaller dimensions than the norm, causing a shift in the distribution towards the negative side. The kurtosis value of 2.4713 indicates that the distribution has somewhat heavy tails. This suggests that while most organisations have sizes near to the average, there are still a few companies with much higher or lower sizes. These outliers contribute to the divergence of the distribution from a normal distribution.

The oil and gas industry has a mean Leverage (LEV) of 0.6748, which suggests that firms in this sector have a somewhat ordinary degree of financial leverage. Within this framework, the term "moderate mean" indicates that, on a general basis, enterprises operating in the oil and gas industry choose a well-balanced strategy in terms of debt and equity. The standard deviation of 0.2828 indicates the extent of variation in leverage levels across individual firms, suggesting that some companies in the sector have either greater or lower levels of financial leverage relative to the average. The examined firms have a wide variation in financial arrangements, as seen by the range of values which extends from 0.1522 to 2.2223. The distribution of Leverage has a positive skewness of 2.9669, indicating that the right tail of the distribution is longer and more spread out than the left tail. This suggests that there is a greater number of enterprises with a higher level of leverage than the average, causing the distribution to skew towards the positive side. The presence of somewhat heavy tails, as seen by the kurtosis value of 16.4682, implies that while most organisations have moderate degrees of leverage, there are still exceptional cases with much greater or lower leverage levels. These outliers contribute to the divergence from a normal distribution.

The oil and gas sector has an average Operating Cycle (OC) of 111.71, which indicates the typical length of the operating cycle for enterprises in this industry. The significant standard deviation of 53.9926 indicates a substantial range in operational cycle lengths across different organisations. This suggests that some firms in the oil and gas industry

have operating cycles that are either longer or shorter than the industry average. The standard deviation of operating cycle lengths highlights the variation in business processes and operational efficiency across enterprises in the industry. The operating cycle distribution has a positive skewness of 0.4438, indicating that the right tail of the distribution is longer and more spread out. This suggests that there is a higher number of enterprises with longer operating cycles than the norm, which is causing the skewness to be positive. The kurtosis value of 3.8614 indicates that the distribution of operating cycles for firms has fairly heavy tails. This suggests that most companies have operating cycles around the average, but there are still outliers with much longer or shorter operating cycles. From a practical standpoint, a lengthier operating cycle might suggest that enterprises in the oil and gas industry can have difficulties associated with prolonged durations for activities like as exploration, production, and sales. In contrast, shorter operating cycles may indicate greater operational efficiency and faster utilisation of resources.

The sales growth (SG) indicator provides valuable insights into the revenue dynamics of organisations operating in the oil and gas industry. The average sales growth of 0.0247 shows a positive trend, indicating that, on average, these firms have had a rise in sales over the examined time. The high standard deviation of 0.4560 indicates a considerable amount of variation in sales growth rates across individual businesses in the industry. The presence of variety within the sector results in varying rates of sales growth across enterprises, which may be attributed to variables such as shifts in market demand, variations in commodity prices, and strategic business choices. The sales growth rates span from -1 to 1.4551, highlighting the varied growth experiences across different organisations. Instances of diminishing sales are indicated by negative figures, while positive ones imply increase. The variability of this range exemplifies the ever-changing and fiercely competitive characteristics of the oil and gas sector. The skewness coefficient of 0.4573 indicates a rightward skew in the distribution, indicating that a greater number of enterprises have sales growth rates that exceed the average. Practically speaking, this suggests a clustering of enterprises experiencing above-average growth. The kurtosis value of 3.6584 suggests that the distribution of sales growth has somewhat heavy tails. This indicates the presence of outliers in the dataset, which are firms that have sales

growth rates that deviate considerably from the majority. These outliers may refer to firms who are either having extraordinary success or encountering difficulties that are affecting their sales growth.

The oil and gas firms under review are operating in a modest economic climate, as shown by the average GDP of 2.4060. The studied period exhibits significant variety in economic circumstances, as shown by the standard deviation of 2.7073. The variability seen may be attributed to variables such as oscillations in oil prices, geopolitical events, and global economic trends, all of which have the potential to affect the performance of enterprises in the oil and gas industry. The skewness value of -0.0193 indicates that the distribution is almost symmetrical. Within the framework of GDP, this signifies a somewhat equitable dispersion of economic circumstances around the average. Nevertheless, it is crucial to acknowledge that the negative skewness indicates a somewhat elongated left tail, indicating the presence of a few occurrences of below-average GDP, presumably caused by economic recessions or external disturbances. The kurtosis value of 2.1857 suggests that the distribution has somewhat heavy tails. This indicates the presence of outliers in the GDP statistics, which correspond to periods of very high or low economic activity. These outliers may be linked to distinct occurrences such as economic recessions, times of strong economic expansion, or other external variables that affect the oil and gas industry.

The average inflation rate of 13.281 for the oil and gas industry is the mean rate of price escalation throughout the examined period. The presence of a standard deviation of 4.1275 implies that there is a notable amount of variation in inflation rates. This suggests that enterprises operating in the oil and gas industry may have encountered varying degrees of cost pressures and price dynamics. The skewness coefficient of 0.4083 indicates a distribution that is substantially right-skewed. Within the framework of inflation rates, this suggests that some organisations may have a proclivity for above-average inflation, presumably driven by industry-specific characteristics, economic circumstances, or external disturbances. The kurtosis value of 2.1783 suggests that the distribution has moderate outliers, indicating that there may be inflation rates that significantly differ from the average.

The mean exchange rate of 297.64 for the oil and gas industry signifies the average value of the exchange rate, offering valuable understanding of the currency dynamics that impact global commerce. The presence of a standard deviation of 100.236 suggests a significant level of variation in exchange rates across the studied firms. The presence of variability indicates that enterprises operating in the oil and gas industry may encounter a wide range of obstacles and possibilities linked to changes in currency values. The skewness coefficient of -0.0890 indicates a distribution that is somewhat left-skewed. Within the framework of exchange rates, this suggests that some organisations may encounter below-average exchange rates, which might be impacted by variables such as geopolitical events, economic circumstances, or currency market dynamics. The kurtosis value of 1.6800 suggests that the distribution has somewhat heavy tails, indicating the presence of extreme values in exchange rates.

6.4.2 Correlation matrix of oil and gas sector

The table below presents a summary of the correlation results of the variables for the sample companies listed in the oil and gas sector.

Table 6.18: Summary of Pearson correlation matrix for oil and gas sector

	ROA	CR	FZ	LEV	OC	SG	GDP	InfR	ExcR
ROA	1.0000								
Sig									
CR	-0.0312	1.0000							
Sig	0.7837								
FZ	0.0237	-0.6165	1.0000						
Sig	0.8348	0.0000							
LEV	-0.2496	-0.4622	0.4809	1.0000					
Sig	0.0255	0.0000	0.0000						
OC	0.1370	0.2503	-0.0245	0.1167	1.0000				
Sig	0.2255	0.0252	0.8292	0.3025					
SG	0.0308	-0.0452	0.0349	0.0027	-0.0606	1.0000			
Sig	0.7861	0.6905	0.7588	0.9813	0.5931				
GDP	0.0312	-0.0310	-0.0758	-0.0884	-0.0732	0.0954	1.0000		
Sig	0.7833	0.7851	0.5038	0.4355	0.5189	0.3999			
InfR	-0.1005	0.0039	0.0747	0.0208	-0.0299	0.0805	-0.4021	1.0000	
Sig	0.3752	0.9725	0.5104	0.8545	0.7925	0.4779	0.0002		
ExcR	0.0237	0.0382	0.0727	-0.0653	0.0068	0.0058	-0.4081	0.6036	1.0000
Sig	0.8349	0.7363	0.5218	0.5647	0.9521	0.9592	0.0002	0.0000	

Source: Research computation using STATA 14

Table 6.18 above shows the Pearson correlation coefficients of the sample companies listed in the oil and gas sector for the period under study.

The Return on Assets (ROA) has a notable inverse connection with Leverage (LEV) of -0.2496, with a p-value of 0.0255. Consequently, organisations that have a larger level of debt are likely to have poorer returns on their assets. The inverse relationship indicates

that an increased dependence on debt might potentially affect the profitability of these organisations.

The lack of substantial correlations between CR and other factors suggests that the changes in CR are not significantly associated with the observed variables.

The correlation coefficient between Firm Size (FZ) and LEV is -0.6165, with a p-value of 0.0000. This indicates that there is a negative relationship between firm size and leverage, implying that bigger businesses are more likely to have lower levels of debt. Consequently, when the magnitude of oil and gas corporations expands, their need on debt in their financial framework diminishes.

The Leverage (LEV) has notable links within the oil and gas industry. The variable has a negative correlation with both Return on Assets (ROA) with a coefficient of -0.2496 and a p-value of 0.0255, as well as with FZ with a coefficient of -0.4622 and a p-value of 0.0000. Companies that have more leverage tend to have poorer returns on assets, as seen by the negative association with ROA. The inverse connection with FZ implies that smaller businesses may exhibit more leverage, showing a possible association between firm size and leverage.

The Operating Cycle (OC) has a significant positive link with LEV (correlation coefficient = 0.2503, p-value = 0.0252). This suggests that organisations with longer operational cycles are more likely to have greater levels of debt. The presence of a positive connection indicates that the length of the operational cycle might potentially impact the financing arrangement of these organisations.

There is no substantial link between Sales Growth (SG) and other factors in the oil and gas industry. This implies that there is not a substantial correlation between the measured factors and fluctuations in sales growth.

The Gross Domestic Product (GDP) has little correlations with other variables, suggesting that the variables in the oil and gas industry may not be highly influenced by economic circumstances, as indicated by GDP.

The inflation rate (InfR) has a negative correlation with the exchange rate (ExcR) of -0.4021, with a p-value of 0.0002. Companies in the oil and gas industry that have greater inflation rates are likely to encounter lower exchange rates.

The exchange rate (ExcR) shows strong relationships within the oil and gas industry. The variable has a negative correlation of -0.4081 with LEV ($p=0.0000$) and a positive correlation of 0.0002 with InfR. The inverse relationship with LEV implies that firms with higher currency exchange rates may have lower levels of leverage. The presence of a positive association with InfR suggests that companies that have higher exchange rates are likely to encounter higher inflation rates.

The next table presents a summary of the Spearman correlation results of the sample companies in the financial sector considered in the study.

Table 6.19: Summary of Spearman correlation matrix for oil and gas sector

	ROA	CR	FZ	LEV	OC	SG	GDP	InfR	ExcR
ROA	1.0000								
Sig									
CR	-0.0220	1.0000							
Sig	0.8461								
FZ	0.2831	-0.5797	1.0000						
Sig	0.0109	0.0000							
LEV	0.1436	-0.5720	0.7154	1.0000					
Sig	0.2037	0.0000	0.0000						
OC	-0.1989	0.2197	0.0105	0.0719	1.0000				
Sig	0.0770	0.0502	0.9265	0.5262					
SG	0.2935	0.0798	0.1036	0.0273	-0.1777	1.0000			
Sig	0.0082	0.4814	0.3607	0.8104	0.1148				
GDP	0.0333	0.0375	-0.1395	-0.0756	-0.1189	0.0830	1.0000		
Sig	0.7696	0.7412	0.2173	0.5052	0.2934	0.4641			
InfR	-0.1952	-0.1193	0.1355	-0.0124	0.0281	0.1627	-0.3576	1.0000	
Sig	0.0828	0.2919	0.2307	0.9128	0.8047	0.1492	0.0011		
ExcR	-0.2327	-0.1021	0.0850	-0.1310	0.0511	0.0553	-0.2970	0.7939	1.0000
Sig	0.0378	0.3673	0.4535	0.2468	0.6528	0.6260	0.0075	0.0000	

Source: Research computation using STATA 14

The Spearman correlation coefficient matrix in Table 6.19 indicates that the ROA in the oil and gas sector does not show significant relationships with other factors, suggesting that fluctuations in ROA are not greatly driven by the observable financial indicators.

The lack of substantial connections indicates that changes in the CR are not closely associated with other financial indicators. This suggests that the current ratio, which

measures liquidity positions, might be affected by variables that are not accounted for in the correlation matrix.

FZ has a negative correlation with CR (Coefficient: -0.5797, Sig: 0.0000) and LEV (Coefficient: -0.5720, Sig: 0.0000). It is possible that larger companies have lower current ratios and leverage, which may be attributed to variations in their capital structures and methods for managing working capital.

The negative correlation between LEV and FZ (Coefficient: -0.5720, Sig: 0.0000), as well as the positive correlation between LEV and OC (Coefficient: 0.2197, Sig: 0.0502), indicate that bigger companies tend to have lower levels of debt financing, while companies with longer operational cycles tend to have greater levels of debt financing.

The OC has a positive connection with LEV with a coefficient of 0.2197 and a significance level of 0.0502. This suggests that companies with longer operating cycles tend to rely on greater levels of debt to finance their continuous operational operations.

SG has a positive association with FZ, with a coefficient of 0.0798 and a significance level of 0.4814. Conversely, SG demonstrates a negative correlation with ExcR, with a coefficient of -0.1777 and a significance level of 0.1148. These findings indicate that bigger enterprises are likely to have more sales growth, while higher exchange rates may be linked to poorer sales growth.

The absence of substantial connections indicates that GDP may not have a substantial effect on financial indicators within the oil and gas sector.

The negative association between the InfR and the ExcR with a coefficient of -0.3576 and a significance level of 0.0011 suggests that companies facing greater inflation rates are likely to encounter lower exchange rates.

Lastly, the ExcR has negative relationships with CR (Coefficient: -0.1021, Sig: 0.3673) and LEV (Coefficient: -0.2970, Sig: 0.0075), indicating that higher exchange rates may be linked to lower current ratios and leverage in the oil and gas sector.

The results of Pearson and Spearman correlation matrix also indicate that there is no existence of multicollinearity between the independent variables, with the maximum

correlation coefficient of 0.6036 and 0.7939 is found between exchange rate and inflation rate, which implies that there is no existence of multicollinearity among the independent variables. Hence, the VIF test was carried out to affirm the absence of multicollinearity. This is presented in the table below.

Table 6.20: Test for multicollinearity of the oil and gas sector using VIF

Variable	VIF	1/VIF
FZ	1.34	0.748404
LEV	1.38	0.722189
OC	1.04	0.964498
SG	1.04	0.964682
GDP	1.26	0.791388
InfR	2.00	0.333794
ExcR	2.03	0.330526
Mean VIF	1.73	

Source: Research computation using STATA 14

Table 6.20 above presents the result of the VIF of the sample companies listed under the oil and gas sector, which reveals a value of less than 10. This signifies the absence of multicollinearity among the independent variables, implying that the study can rely on the regression results to predict the level of impact of independent variables on dependent variables for the sample companies in the oil and gas sector.

6.4.3 Hausman test of the oil and gas sector

The table below shows the summary of Hausman test results for the sample companies listed in the oil and gas sector.

Table 6.21: Summary of Hausman test result for the oil and gas sector

Variables	Chi2	P-value
ROA	4.39	0.3557
CR	0.68	0.9537

Source: Research computation using STATA 14

Decision rule:

H_0 : Random effect model is preferable to fixed effect model.

H_1 : Fixed effect model is preferable to random effect model.

When Chi-square probability value is less than 10, reject H_0 and accept H_1 .

When Chi-square probability value is greater than 10, accept H_0 and reject H_1 .

Table 6.21 above presents the summary of Hausman test results for the sample companies listed under the oil and gas sector. The results reveal a Chi-square value of 4.39 and a p-value of 0.3557 for ROA. This signifies that the p-value is greater than the 10% confidence interval. Therefore, the decision rule accepts the random effect model and rejects the fixed effect model.

Lastly, CR shows a Chi-square value of 0.68 and a p-value of 0.9537. This means that the p-value is still greater than 10%. The researcher therefore accepts the random effect model and rejects the fixed effect model.

After reporting the Hausman test results, the study estimate the Breusch and Pagan Lagrangian multiplier test for random effect model for ROA and CR to test for the significance of the variables in order to report either the random effect model or to estimate and interpret the result of pooled OLS regression. The results of the Breusch and Pagan Lagrangian multiplier test for random effects for ROA and CR report a significant value; this is presented in the table below.

Table 6.22: Breusch and Pagan Lagrangian multiplier test for random effects for the oil and gas sector

Variables	Chi2	P-value
ROA	0.00	0.0000
CR	0.00	0.0000

Source: Research computation using STATA 14

Table 6.22 above shows the results of the Breusch and Pagan Lagrangian multiplier test for random effects on ROA and CR of the sample companies in the oil and gas sector. The results reveal a Chi2 of 0.00 and a p-value of 0.0000 for both ROA and CR. This shows a significant value. Hence, the researcher estimates and interprets the RE regression model results for the variables.

6.4.4 Regression results of the oil and gas sector

Tables 6.23 and 6.24 below present the regression results for the sample companies in the oil and gas sector considered in the study.

Table 6.23: Summary of multiple regression analysis showing the relationship between ROA and independent variables of the oil and gas sector

Variables	Coefficient	P-value
Constants	-0.1865059	0.415
FZ	0.0493718	0.114
LEV	-0.2481017	0.007***
OC	0.000659	0.016***
SG	0.024982	0.610
GDP	-0.0002709	0.976
InfR	-0.013198	0.152
ExcR	0.0004036	0.290
R-Squared	0.3956	0.0822

NB: 1%, 5%, 10% levels of significance are represented by ***, **, and *, respectively

Source: Research computation using STATA 14

Table 6.23 above presents the results of multiple regression analysis for the variables determining the financial performance proxy by ROA of the sample companies listed in the oil and gas sector. The results of the analysis reveal the R-squared value which is 0.3956, suggesting that about 39.56% of the variation in ROA can be accounted for by the independent variables included in the model. Nevertheless, the p-value linked to the model ($p=0.0822$) is within the accepted significance thresholds (10%), indicating that the model, as a whole, is statistically sound.

The coefficient for FZ is 0.0493718, suggesting a positive correlation with ROA. Ultimately, the p-value of 0.114 above the 10% significance interval, indicating that the observed connection may lack statistical significance. This suggests that fluctuations in firm size may not consistently correlate with fluctuations in ROA within the oil and gas sector.

The coefficient of -0.2481017 and the low p-value of 0.007 indicate a statistically significant negative correlation between LEV and ROA. This implies that higher debt in the oil and gas sector is statistically linked to low ROA.

The OC has a positive coefficient of 0.000659, indicating a positive correlation with ROA. However, the p-value of 0.016 indicate a statistically significant impact. This suggests that there is a statistically significant link, and variations in the operating cycle may consistently forecast variations in ROA.

The coefficient for SG is 0.024982, but, the p-value of 0.610 above the 10% significance level. This indicates that there is no statistically significant correlation between sales growth and return on asset in the oil and gas sector. This suggests that fluctuations in sales growth may not consistently account for fluctuations in return on assets.

The coefficient for GDP is -0.0002709, with a p-value of 0.976. This suggests that there is no statistically significant correlation between GDP and ROA at any conventional level of significance. This implies that fluctuations in the broader economic circumstances, as shown by GDP, may not accurately forecast variations in ROA.

The coefficient of the InfR is -0.013198, nevertheless, the p-value of 0.152 above the 10% significance level. This suggests that there is no statistically significant correlation

between the inflation rate and return on assets in the oil and gas sector. Furthermore, fluctuations in the InfR may not consistently forecast changes in ROA.

The coefficient for the ExcR is 0.0004036, and the p-value of 0.290 above the significance interval of 10%. This indicates that there is no statistically significant correlation between the exchange rate and return on assets in the oil and gas sector. Hence, fluctuations in exchange rates may not consistently explain variations in return on assets.

Table 6.24: Summary of multiple regression analysis showing the relationship between CR and independent variables of the oil and gas sector

Variables	Coefficient	P-value
Constants	0.323821	0.000
FZ	-0.5274826	0.000***
LEV	-0.8046612	0.008***
OC	0.0042692	0.002***
SG	-0.014101	0.931
GDP	-0.0183413	0.546
InfR	0.0035803	0.907
ExcR	0.0001585	0.901
R-Squared	0.4925	0.0000

NB: 1%, 5%, 10% levels of significance are represented by ***, **, and *, respectively

Source: Research computation using STATA 14

The results of multiple regression analysis in Table 6.24 examines the connections between the CR and other independent variables in the oil and gas sector. The R-squared value of 0.4925 indicates that about 49.25% of the variation in CR can be accounted for by the independent variables in the model. The p-value corresponding to the model is very significant ($p=0.0000$), indicating that the model is statistically robust.

The coefficient for FZ is -0.5274826, and the p-value of 0.000 indicates a very significant negative correlation with CR. Consequently, it may be inferred that bigger companies in the oil and gas industry are likely to have lower current ratios. The presence of a negative coefficient suggests that as the size of a firm grows, its current ratio tends to decline. This

decline may be attributed to the capital structure and liquidity management measures used by bigger companies.

The coefficient for LEV is -0.8046612, and its p-value of 0.008 indicates a very significant negative correlation with CR. Consequently, there is a negative correlation between increased debt levels and current ratios in the oil and gas sector. Companies that have a higher amount of debt may have difficulties in maintaining sufficient levels of liquidity, which may lead to lower current ratios.

The OC coefficient is 0.0042692, and its p-value of 0.002 indicating a statistically significant positive correlation with CR. Consequently, companies with longer operational cycles are more likely to have larger current ratios. The presence of a positive coefficient suggests that as the operational cycle extends, the current ratio experiences a rise, indicating a possible favourable effect on liquidity.

The coefficient for SG is -0.014101, however the p-value of 0.931 is not statistically significant. These findings indicate that there is no statistically significant correlation between sales growth and current ratio in the oil and gas sector. Fluctuations in sales growth may not consistently indicate alterations in the current ratio.

The coefficient for GDP is -0.0183413, and the p-value of 0.546 is not statistically significant. This suggests that there is no statistically significant correlation between GDP and CR at standard levels of significance. Fluctuations in GDP, may not consistently explain fluctuations in the current ratio.

The InfR has a coefficient of 0.0035803, and the p-value of 0.907 indicates that it is not statistically significant. This implies that there is no statistically significant correlation between the inflation rate and the current ratio in the oil and gas industry. Fluctuations in the inflation rate may not consistently indicate fluctuations in the current ratio.

The ExcR coefficient is 0.0001585, and the p-value of 0.901 is not statistically significant. Consequently, there is no statistically meaningful correlation between the ExcR and CR at standard levels of significance. Fluctuations in exchange rates may not consistently account for variations in the current ratio.

This concludes the data presentation and analysis of the results of the oil and gas sector. The next section compares the analysis of the three chosen sectors.

6.5 Comparison of the selected sectors

The following table presents a comparative analysis of the chosen sectors to determine the extent to which firm-specific characteristics and macroeconomic variables influence their performance. The outcomes of the regression analysis conducted on the three selected sectors on pages (161–164, 178–181, and 195–198) were utilised to compare the sectors with the most affected firm-specific and macroeconomic variables that were taken into account in the investigation.

Table 6.25: Cross sector comparison of the variables and its impact on the chosen sectors

Variables	Consumer goods sector		Financial sector		Oil and gas sector	
IV/DV	ROA	CR	ROA	CR	ROA	CR
FZ	NO	NO	NO	YES	NO	YES
LEV	NO	YES	YES	YES	YES	YES
OC	YES	YES	NO	NO	YES	YES
SG	NO	YES	YES	NO	NO	NO
GDP	NO	NO	NO	NO	NO	NO
InfR	NO	NO	NO	NO	NO	NO
ExcR	NO	NO	NO	NO	NO	NO

NB: Impact = YES, No impact = NO

Source: Research computation

Based on the results of the regressions conducted on the selected sectors, one can see in Table 6.25 that firm-specific characteristics have the greatest impact on the financial performance of the oil and gas sector and the financial sector in Nigeria with two variables each having significant impact. These are LEV and OC for oil and gas sector, and LEV and SG for financial sector. Lastly, it was found that only OC impact the financial

performance of consumer goods sector in Nigeria. This mean that firm-specific characteristics have limited impact on the financial performance of the consumer goods sector compared to the oil and gas sector and the financial sector in Nigeria.

The above table also demonstrates that three significant impacts primarily reflect the impact of firm-specific characteristics on the working capital management of the oil and gas sector and the consumer goods sector in Nigeria. The three significant impact are FZ, LEV and OC (oil and gas sector) LEV, OC and SG (consumer goods sector). Lastly, the financial sector in Nigeria has only two significant impact, these are FZ and LEV. This also implies that firm-specific characteristics have limited impact on the working capital management of the financial sector compared to the oil and gas sector and the consumer goods sector in Nigeria.

Finally, the table above revealed that macroeconomic variables has no significant impact on the financial performance and working capital management of the three selected sectors in Nigeria.

In conclusion, the researcher's findings concluded that firm-specific characteristics have the biggest impact on the financial performance and working capital management of the oil and gas sector in Nigeria, followed by the financial sector, and finally the consumer goods sector, while macroeconomic variables does not impact the financial performance and working capital management of the oil and gas sector, the financial sector and the consumer goods sector in Nigeria. Hence, the study proposes that academics, decision makers, and potential investors should prioritise their focus on the oil and gas sector in Nigeria. This sector demonstrates a more substantial influence of firm attributes on financial performance and working capital management, in comparison to the financial sector and, finally, the consumer goods sector.

6.6 Test of hypotheses

After obtaining the results of the multiple regression models for the selected sectors, the study used the results for hypothesis testing, as mentioned in paragraph 1.6.1 and 1.6.2 on pages 20–21. The test of hypotheses was carried out as follows:

Step 1: Re-statement of hypotheses in null and alternate forms

Step 2: Statement of decision criteria

Step 3: Decision

The study used the regression results presented for the sample companies of the selected sectors, as detailed on pages 161–164, 178–181, and 195–198, to test the hypotheses. Table 6.26 below present the summary of the hypothesis testing.

Table 6.26 Summary of hypothesis testing

Variables	Consumer goods sector		Financial sector		Oil and gas sector	
	ROA	CR	ROA	CR	ROA	CR
FZ	(0.186) Rejected	(0.114) Rejected	(0.724) Rejected	(0.023**) Accepted	(0.114) Rejected	(0.000***) Accepted
LEV	(0.995) Rejected	(0.076*) Accepted	(0.000***) Accepted	(0.000***) Accepted	(0.007***) Accepted	(0.008***) Accepted
OC	(0.068*) Accepted	(0.000***) Accepted	(0.308) Rejected	(0.197) Rejected	(0.016***) Accepted	(0.002***) Accepted
SG	(0.856) Rejected	(0.108*) Accepted	(0.000***) Accepted	(0.818) Rejected	(0.610) Rejected	(0.931) Rejected
GDP	(0.149) Rejected	(0.288) Rejected	(0.871) Rejected	(0.348) Rejected	(0.976) Rejected	(0.546) Rejected
InfR	(0.784) Rejected	(0.455) Rejected	(0.531) Rejected	(0.397) Rejected	(0.152) Rejected	(0.907) Rejected
ExcR	(0.990) Rejected	(0.115) Rejected	(0.177) Rejected	(0.625) Rejected	(0.290) Rejected	(0.901) Rejected

Source: Research computation

6.6.1 Firm-specific characteristics

Hypothesis 1

H01a: Firm size has a significant impact on the financial performance of listed consumer goods sector in Nigeria.

H01b: Firm size has a significant impact on the financial performance of listed financial sector in Nigeria.

H01c: Firm size has a significant impact on the financial performance of listed oil and gas sector in Nigeria.

H02a: Firm size has a significant impact on the working capital management of listed consumer goods sector in Nigeria.

H02b: Firm size has a significant impact on the working capital management of listed financial sector in Nigeria.

H02c: Firm size has a significant impact on the working capital management of listed oil and gas sector in Nigeria.

Decision criteria

Accept H_0 if there is a significant impact.

Accept H_1 if there is no significant impact.

Decision:

Table 6.26 above presents the hypothesis used to test for the firm size of sampled companies listed under the consumer goods sector, financial sector and the oil and gas sector in Nigeria that were considered in the study.

H_{01a} : The results in Table 6.26 above show that firm size has no significant impact on the financial performance of listed consumer goods sector in Nigeria reporting a p-value of (0.186). Therefore, the researcher rejects the null hypothesis (H_{01a}), which reveals that firm size has a significant impact on the financial performance of listed consumer goods sector in Nigeria.

H_{01b}: The results show that firm size has no significant impact on the financial performance of listed financial sector in Nigeria. The findings reported a p-value of (0.724) which is statistically insignificant. Therefore, the study rejects the null hypothesis (H_{01b}), which reveals that firm size has a significant impact on the financial performance of listed financial sector in Nigeria.

H_{01c}: The analysis also revealed that firm size has no significant impact on the financial performance of listed oil and gas sector in Nigeria, reporting a p-value of (0.114) which is greater than 10% confidence level. The study therefore rejects the null hypothesis (H_{01c}), which state that firm size has a significant impact on the financial performance of listed oil and gas sector in Nigeria.

H_{02a}: The data presented in Table 6.26 indicates that firm size does not have a statistically significant impact on the working capital management in the consumer goods sector of Nigeria's listed companies. The result recorded a p-value of (0.114) which is statistically insignificant. Consequently, the researcher refutes the null hypothesis (H_{02a}), indicating that firm size has a substantial influence on the working capital management in the consumer goods sector of Nigeria's listed companies.

H_{02b}: The results indicates that firm size has a statistically significant impact on the working capital management of listed financial sector in Nigeria, giving a p-value of (0.023). Based on the results, the study accepts the null hypothesis (H_{02b}), indicating that firm size has a substantial influence on the working capital management of listed financial sector in Nigeria.

H_{02c}: The analysis indicates that firm size has a significant impact on the working capital management of listed companies in the oil and gas sector in Nigeria. The findings reveal a p-value of (0.000) which is significant at 1% confidence interval. Consequently, the study support the null hypothesis (H_{02c}), indicating that firm size has a substantial influence on the working capital management of listed companies in the oil and gas sector in Nigeria.

Hypothesis 2

H01a: Leverage has a significant impact on the financial performance of listed consumer goods sector in Nigeria.

H01b: Leverage has a significant impact on the financial performance of listed financial sector in Nigeria.

H01c: Leverage has a significant impact on the financial performance of listed oil and gas sector in Nigeria.

H02a: Leverage has a significant impact on the working capital management of listed consumer goods sector in Nigeria.

H02b: Leverage has a significant impact on the working capital management of listed financial sector in Nigeria.

H02c: Leverage has a significant impact on the working capital management of listed oil and gas sector in Nigeria.

Decision:

This hypothesis was used to test the leverage of the sampled companies listed under the consumer goods sector, financial sector and the oil and gas sector in Nigeria considered in the study.

H_{01a}: The analysis in Table 6.26 above indicate that leverage has no significant impact on the financial performance of listed consumer goods sector in Nigeria recording a probability value of (0.995) greather than 10%. Therefore, the researcher rejects the null hypothesis (H_{01a}) that leverage has a significant impact on the financial performance of listed consumer goods sector in Nigeria.

H_{01b}: The study also suggests that leverage has a major influence on the financial performance of the listed financial sector in Nigeria. The result report a p-value of (0.000) which is statistically significant at 1%. Thus, the analysis confirms the null hypothesis (H_{01b}) that leverage has a substantial influence on the financial performance of the financial sector companies listed in Nigeria.

H_{01c}: The results in the Table above shows that leverage has significant impact on the financial performance of listed oil and gas sector in Nigeria. The findings revealed a p-value of (0.007) which is significant at 1% statistical level. Based on the results, the study support the null hypothesis (H_{01c}) that leverage has a significant impact on the financial performance of listed oil and gas sector in Nigeria.

H_{02a}: The outcomes presented in Table 6.26 reported a probability value of (0.076) at 10% confidence interval. This demonstrate that leverage exert a statistically significant impact on the working capital management of listed consumer goods sector in Nigeria. Thus, the researcher accepts the null hypothesis (H_{02a}), which posits that the impact of leverage on the working capital management of listed consumer good companies in Nigeria has significant impact.

H_{02b}: The analysis showed in the above table demonstrate a p-value of (0.000) at 1% statistical level. This suggest that leverage has a significant impact on the working capital management of listed financial sector in Nigeria. Therefore, the null hypothesis (H_{02b}) that leverage has significant impact on working capital management of listed financial sector in Nigeria was accepted.

H_{02c}: The findings in the table above indicate that leverage has significant impact on the working capital management of companies listed in the oil and gas sector in Nigeria. The study reported a p-value of (0.008) which is significant at 1% confidence interval. Thus, the null hypothesis (H_{02c}) that leverage has a significant impact on the working capital management of listed oil and gas sector in Nigeria was accepted.

Hypothesis 3

H01a: The operating cycle has a significant impact on the financial performance of listed consumer goods sector in Nigeria.

H01b: The operating cycle has a significant impact on the financial performance of listed financial sector in Nigeria.

H01c: The operating cycle has a significant impact on the financial performance of listed oil and gas sector in Nigeria.

H02a: The operating cycle has a significant impact on the working capital management of listed consumer goods sector in Nigeria.

H02b: The operating cycle has a significant impact on the working capital management of listed financial sector in Nigeria.

H02c: The operating cycle has a significant impact on the working capital management of listed oil and gas sector in Nigeria.

Decision:

H_{01a}: The aforementioned findings presented in Table 6.26 indicate a noteworthy impact of the operating cycle on the financial performance of listed consumer goods sector in Nigeria. The findings reported a p-value of (0.068) indicating a statistically significant impact at 10% confidence level. Thus, the researcher concludes that the null hypothesis (H_{01a}) is accepted, indicating that the operating cycle does indeed have a significant impact on the financial performance of listed consumer goods sector in Nigeria.

H_{01b}: The results posit that the findings presented in the table above revealed a p-value of (0.308) which is statistically insignificant. The analysis revealed a non-significant impact of operating cycle on the financial performance of listed financial sector in Nigeria. Thus, the study rejects the null hypothesis (H_{01b}), indicating that the operating cycle has a significant impact on the financial performance of listed financial sector in Nigeria.

H_{01c}: The results in the Table above show that operating cycle has significant impact on the financial performance of listed oil and gas sector in Nigeria. This reported a probability value of (0.016). Based on the results, the study supports the null hypothesis (H_{01c}) that operating cycle has a significant impact on the financial performance of listed oil and gas sector in Nigeria.

H_{02a}: The analysis demonstrate the outcome presented in Table 6.26 indicating that the operating cycle exert a p-value of (0.000) which is statistically and significantly impact the working capital management of consumer goods companies listed in Nigeria. Thus, the researcher accepts the null hypothesis (H_{02a}), which posits that the operating cycle have a significant impact on the working capital management of listed consumer goods sector in Nigeria.

H_{02b}: The results also indicates that the operating cycle has no statistically significant impact on the working capital management of listed financial sector in Nigeria. This is indicated with the p-value of (0.197) which is statistically insignificant. Based on the results, the study rejects the null hypothesis (H_{02b}), indicating that the operating cycle has a substantial influence on the working capital management of listed financial sector in Nigeria.

H_{02c}: The analysis indicates that the operating cycle reported a probability value of (0.002) which has a significant impact on the working capital management of listed companies in the oil and gas sector in Nigeria. Consequently, the study support the null hypothesis (H_{02c}), indicating that the operating cycle has a substantial influence on the working capital management of listed companies in the oil and gas sector in Nigeria.

Hypothesis 4

H01a: Sales growth has a significant impact on the financial performance of listed consumer goods sector in Nigeria.

H01b: Sales growth has a significant impact on the financial performance of listed financial sector in Nigeria.

H01c: Sales growth has a significant impact on the financial performance of listed oil and gas sector in Nigeria.

H02a: Sales growth has a significant impact on the working capital management of listed consumer goods sector in Nigeria.

H02b: Sales growth has a significant impact on the working capital management of listed financial sector in Nigeria.

H02c: Sales growth has a significant impact on the working capital management of listed oil and gas sector in Nigeria.

Decision:

This hypothesis was used to test the sales growth of the sampled companies listed under the consumer goods sector, financial sector and the oil and gas sector in Nigeria.

H_{01a}: The analysis in Table 6.26 above indicate that sales growth has no significant impact on the financial performance of listed consumer goods sector in Nigeria. This revealed a p-value of (0.856) which is statistically insignificant at 10% significant level. Therefore, the researcher rejects the null hypothesis (H_{01a}) that sales growth has a significant impact on the financial performance of listed consumer goods sector in Nigeria.

H_{01b}: The study also suggests that sales growth has a major influence on the financial performance of the listed financial sector in Nigeria reporting a p-value of (0.000) indicating a significant level. Thus, the analysis confirms the null hypothesis (H_{01b}) that sales growth has a substantial influence on the financial performance of the financial sector companies listed in Nigeria.

H_{01c}: The results in the Table above shows a p-value of (0.610) which revealed that sales growth has insignificant impact on the financial performance of listed oil and gas sector in Nigeria. Based on the results, the study rejects the null hypothesis (H_{01c}) that sales growth has a significant impact on the financial performance of listed oil and gas sector in Nigeria.

H_{02a}: The outcomes presented in Table 6.26 demonstrate that sales growth exert a statistically significant impact on the working capital management of listed consumer goods sector in Nigeria. This statistically significant impact revealed a p-value of (0.108) at 10% confidence interval. Thus, the researcher accepts the null hypothesis (H_{02a}), which posits that the impact of sales growth on the working capital management of listed consumer good companies in Nigeria has significant impact.

H_{02b}: The analysis showed in the above table demonstrate a p-value of (0.818) which signifies that sales growth has an insignificant impact on the working capital management of listed financial sector in Nigeria. Therefore, the null hypothesis (H_{02b}) that sales growth has significant impact on working capital management of listed financial sector in Nigeria was rejected.

H_{02c}: The findings in the table above indicate that sales growth also has no significant impact on the working capital management of companies listed in the oil and gas sector in Nigeria, revealing a p-value of (0.931) which is statistically insignificant at 10% significant level. Thus, the null hypothesis (H_{02c}) indicating that sales growth has a significant impact on the working capital management of listed oil and gas sector in Nigeria was rejected.

6.6.2 Macroeconomic variables

Hypothesis 5

H01a: The inflation rate has a significant impact on the financial performance of listed consumer goods sector in Nigeria.

H01b: The inflation rate has a significant impact on the financial performance of listed financial sector in Nigeria.

H01c: The inflation rate has a significant impact on the financial performance of listed oil and gas sector in Nigeria.

H02a: The inflation rate has a significant impact on the working capital management of listed consumer goods sector in Nigeria.

H02b: The inflation rate has a significant impact on the working capital management of listed financial sector in Nigeria.

H02c: The inflation rate has a significant impact on the working capital management of listed oil and gas sector in Nigeria.

Decision:

Table 6.26 above presents the hypothesis used to test for the inflation rate of sampled companies listed under the consumer goods sector, financial sector and the oil and gas sector in Nigeria that were considered in the study.

H_{01a}: The results in Table 6.26 above shows that InfR has no significant impact on the financial performance of listed consumer goods sector in Nigeria reporting a p-value of (0.784). Therefore, the researcher rejects the null hypothesis (H_{01a}), which reveals that InfR has a significant impact on the financial performance of listed consumer goods sector in Nigeria.

H_{01b}: The results also shows that InfR has no significant impact on the financial performance of listed financial sector in Nigeria. The findings reported a p-value of (0.531) which is statistically insignificant. Therefore, the study rejects the null hypothesis (H_{01b}), which reveals that InfR has a significant impact on the financial performance of listed financial sector in Nigeria.

H_{01c}: The analysis finally revealed that InfR has no significant impact on the financial performance of listed oil and gas sector in Nigeria, reporting a p-value of (0.152) which is greater than 10% confidence level. The study therefore rejects the null hypothesis (H_{01c}), which state that InfR has a significant impact on the financial performance of listed oil and gas sector in Nigeria.

H_{02a}: The data presented in Table 6.26 indicates that InfR does not have a statistically significant impact on the working capital management in the consumer goods sector of Nigeria's listed companies. The result recorded a p-value of (0.455) which is statistically insignificant. Consequently, the researcher refutes the null hypothesis (H_{02a}), indicating that InfR has a substantial influence on the working capital management in the consumer goods sector of Nigeria's listed companies.

H_{02b}: The results also indicates that InfR has no statistically significant impact on the working capital management of listed financial sector in Nigeria. This is indicated with the

p-value of (0.397) which is statistically insignificant. Based on the results, the study rejects the null hypothesis (H_{02b}), indicating that the InfR has a substantial influence on the working capital management of listed financial sector in Nigeria.

H_{02c} : The results posits that the findings presented in the table above revealed a p-value of (0.907) which is statistically insignificant. The analysis revealed a non-significant impact of InfR on the working capital management of listed oil and gas sector in Nigeria. Thus, the study rejects the null hypothesis (H_{02c}), indicating that the InfR have a significant impact on the working capital management of listed oil and gas sector in Nigeria.

Hypothesis 6

H01a: GDP has a significant impact on the financial performance of listed consumer goods sector in Nigeria.

H01b: GDP has a significant impact on the financial performance of listed financial sector in Nigeria.

H01c: GDP has a significant impact on the financial performance of listed oil and gas sector in Nigeria.

H02a: GDP has a significant impact on the working capital management of listed consumer goods sector in Nigeria.

H02b: GDP has a significant impact on the working capital management of listed financial sector in Nigeria.

H02c: GDP has a significant impact on the working capital management of listed oil and gas sector in Nigeria.

Decision:

This hypothesis was used to test the impact of GDP on the financial performance and working capital management of the sampled companies listed under the consumer goods sector, financial sector and the oil and gas sector in Nigeria.

This hypothesis was used to test the impact of GDP on the financial performance of listed consumer goods companies in Nigeria.

H_{01a}: The results in Table 6.26 above reveal that GDP has no significant impact on the financial performance of listed consumer goods sector in Nigeria, reporting a p-value of (0.149) indicating a statistically insignificant level. Therefore, the researcher rejects the null hypothesis (H₀₁) that GDP has a significant impact on the financial performance of listed companies in Nigeria.

H_{01b}: The study also suggests that GDP has no major influence on the financial performance of the listed financial sector in Nigeria reporting a p-value of (0.871) indicating an insignificant threshold. Thus, the analysis rejects the null hypothesis (H_{01b}) that GDP has a substantial influence on the financial performance of the financial sector companies listed in Nigeria.

H_{01c}: The analysis finally revealed that GDP has no significant impact on the financial performance of listed oil and gas sector in Nigeria, reporting a p-value of (0.976) which is greater than 10% confidence level. The study therefore rejects the null hypothesis (H_{01c}), which state that GDP has a significant impact on the financial performance of listed oil and gas sector in Nigeria.

H_{02a}: Table 6.26 above reveals that GDP has no significant impact on the working capital management of listed consumer goods companies in Nigeria. The study report a probability value of (0.288) indicating a statistically insignificant impact. Therefore, the researcher rejects the null hypothesis (H_{02a}) that GDP has a significant impact on the working capital management of listed consumer goods companies in Nigeria.

H_{02b}: The analysis showed in the above table demonstrate a p-value of (0.348) which signifies that GDP has an insignificant impact on the working capital management of listed financial sector in Nigeria. Therefore, the null hypothesis (H_{02b}) that GDP has significant impact on working capital management of listed financial sector in Nigeria was rejected.

H_{02c}: The findings in the table above indicate that GDP also has no significant impact on the working capital management of companies listed in the oil and gas sector in Nigeria,

revealing a p-value of (0.546) which is statistically insignificant at 10% significant threshold. Thus, the null hypothesis (H_{02c}) indicating that GDP has a significant impact on the working capital management of listed oil and gas sector in Nigeria was rejected.

Hypothesis 7

H01a: The exchange rate has a significant impact on the financial performance of listed consumer goods sector in Nigeria.

H01b: The exchange rate has a significant impact on the financial performance of listed financial sector in Nigeria.

H01c: The exchange rate has a significant impact on the financial performance of listed oil and gas sector in Nigeria.

H02a: The exchange rate has a significant impact on the working capital management of listed consumer goods sector in Nigeria.

H02b: The exchange rate has a significant impact on the working capital management of listed financial sector in Nigeria.

H02c: The exchange rate has a significant impact on the working capital management of listed oil and gas sector in Nigeria.

Decision:

This hypothesis was used to test the impact of exchange rate on the financial performance and working capital management of the sampled companies listed under the consumer goods sector, financial sector and the oil and gas sector in Nigeria.

H_{01a}: The analysis in Table 6.26 above indicate that ExcR has no significant impact on the financial performance of listed consumer goods sector in Nigeria recording a probability value of (0.990) greather than 10%. Therefore, the researcher rejects the null hypothesis (H_{01a}) that ExcR has a significant impact on the financial performance of listed consumer goods sector in Nigeria.

H_{01b}: The study also report that ExcR has a no major influence on the financial performance of the listed financial sector in Nigeria. The result revealed a p-value of

(0.177) which is statistically insignificant. Thus, the analysis refutes the null hypothesis (H_{01b}) that ExcR has a substantial influence on the financial performance of the financial sector companies listed in Nigeria.

H_{01c} : The results in the Table above also shows that ExcR has insignificant impact on the financial performance of listed oil and gas sector in Nigeria. The findings revealed a p-value of (0.290) which is statistically insignificant. Based on the results, the study do not support the null hypothesis (H_{01c}) that ExcR has a significant impact on the financial performance of listed oil and gas sector in Nigeria.

H_{02a} : The outcomes presented in Table 6.26 reported a probability value of (0.115). This demonstrate that ExcR exert a statistically insignificant impact on the working capital management of listed consumer goods sector in Nigeria. Thus, the researcher rejects the null hypothesis (H_{02a}), which posits that the impact of ExcR on the working capital management of listed consumer good companies in Nigeria has significant impact.

H_{02b} : The analysis showed in the above table demonstrate a p-value of (0.625) which is insignificant. This implies that ExcR has an insignificant impact on the working capital management of listed financial sector in Nigeria. Therefore, the null hypothesis (H_{02b}) that ExcR has significant impact on working capital management of listed financial sector in Nigeria was rejected.

H_{02c} : Finally, the findings in Table 6.26 above indicate that ExcR has an insignificant impact on the working capital management of companies listed in the oil and gas sector in Nigeria. The study reported a p-value of (0.901) which is statistically insignificant. Thus, the null hypothesis (H_{02c}) that ExcR has a significant impact on the working capital management of listed oil and gas sector in Nigeria was rejected.

6.7 Revisiting the research objectives

This section presents the regression outcomes obtained in this study in relation to the research objectives 1.4.1 to 1.4.4 on pages 18-19. The study's key objectives are

effectively accomplished, as evidenced by compelling results. The following statement is presented below:

6.7.1 Research objective 1 on firm-specific characteristics and financial performance

To investigate the impact of firm-specific characteristics on the financial performance of listed consumer goods sector, financial sector and oil and gas sector in Nigeria.

By carefully examining the regression results of the sample companies for the three selected sectors on pages (161–164, 178–181, and 195–198) of this study for firm-specific characteristics, research objective 1 on firm-specific characteristics and financial performance has been successful. The study has established that the financial performance of listed consumer goods sector in Nigeria is significantly impacted by firm-specific attributes, as gauged by OC. The study also established that the financial performance of listed financial sector in Nigeria is significantly impacted by LEV and SG. Lastly, the study revealed that the financial performance of listed oil and gas sector in Nigeria is significantly impacted by firm-specific attributes, as gauged by LEV and OC.

6.7.2 Research objective 2 on firm-specific characteristics and financial performance

To compare the three sectors by looking at which sector's firm-specific characteristics impacted the most on the financial performance in Nigeria.

The findings from the regression analysis of the three selected sectors revealed that the oil and gas sector and the financial sector in Nigeria is the most impacted by firm-specific characteristics, while the consumer goods sector has limited impact compared to the oil and gas sector and the financial sector in Nigeria. This demonstrates the attainment of research objective two, which focused on examining the interplay between firm-specific characteristics and financial performance of the selected sectors.

6.7.3 Research objective 1 on firm-specific characteristics and working capital management

To investigate the impact of firm-specific characteristics on the working capital management of listed consumer goods sector, financial sector and the oil and gas sector in Nigeria.

The research objective one pertaining to firm-specific characteristics and working capital management has been effectively fulfilled through the regression analysis of the three selected sectors considered in this study. The research has validated that the working capital management of listed consumer goods companies in Nigeria is significantly influenced by firm-specific attributes, as measured by LEV, OC and SG. On the other hand, the study also validated that the working capital management of listed financial sector in Nigeria is significantly influenced by FZ and LEV. Finally, the research validated that the working capital management of listed oil and gas sector in Nigeria is significantly influenced by firm-specific attributes, as measured by FZ, LEV and OC.

6.7.4 Research objective 2 on firm-specific characteristics and working capital management

To compare the three sectors by looking at which sector's firm-specific characteristics impacted the most on the working capital management in Nigeria.

The findings from the regression analysis of the three selected sectors revealed that the oil and gas sector and the consumer goods sector exhibits the highest impact of firm-specific characteristics on working capital management, while the financial sector has the least impact. The fulfilment of research objective two, pertaining to firm-specific characteristics and working capital management, is affirmed by the findings obtained from the selected sectors.

6.7.5 Research objective 1 on macroeconomic variables and financial performance

To what extent macroeconomic variables impact the financial performance of listed consumer goods sector, financial sector and the oil and gas sector in Nigeria.

The regression results of the sample companies for the three selected sectors on pages (161–164, 178–181, and 195–198) of this study for macroeconomic variables, research objective 1 on macroeconomic variables and financial performance has been successful. The study indicates that macroeconomic variables of GDP, InfR and ExcR do not impact the financial performance of the listed consumer goods sector, financial sector and the oil and gas sector in Nigeria.

6.7.6 Research objective 2 on macroeconomic variables and financial performance

To observe the three sectors, looking at which sector is impacted the most on financial performance in Nigeria.

The findings from the regression analysis of the three selected sectors revealed that the macroeconomic variables of GDP, InfR and ExcR mostly do not impact the financial performance of the three selected sectors in Nigeria. Therefore the research objective two on macroeconomic variables and financial performance has been successfully accomplished.

6.7.7 Research objective 1 on macroeconomic variables and working capital management

To what extent macroeconomic variables impact the working capital management of listed consumer goods sector, financial sector and the oil and gas sector in Nigeria.

The research objective one pertaining to macroeconomic variables and working capital management has been effectively fulfilled through the regression analysis of the three selected sectors considered in this study. The study revealed that macroeconomic variables of GDP, InfR and ExcR do not impact the working capital management of the listed consumer goods sector, financial sector and the oil and gas sector in Nigeria.

6.7.8 Research objective 2 on macroeconomic variables and working capital management

To observe the three sectors, looking at which sector is impacted the most on working capital management in Nigeria.

The findings from the regression analysis of the three selected sectors revealed that the macroeconomic variables of GDP, InfR and ExcR mostly do not impact the working capital management of the three selected sectors in Nigeria. Therefore the research objective two on macroeconomic variables and working capital management has been successfully accomplished.

6.8 Discussion of findings

The next paragraph discussed the findings of the study

6.8.1 Firm size and financial performance

The regression findings provide insight into the correlation between the firm size and its financial performance in three selected sectors in Nigeria. The limited influence of firm size on the financial performance of consumer goods sector listed in Nigeria indicates that bigger companies in this sector do not always result in better financial results. This is consistent with the conclusions made by Jibril et al. (2023), Ehiedu and Imoagwu (2022), Bobenic et al. (2020), and Suseno (2020), who all noted comparable insignificant correlations between the firm size and financial performance across different sectors and geographical areas.

Similarly, the limited effect of firm size on financial performance in the financial sector suggests that bigger companies in this sector may not regularly surpass their smaller counterparts. This discovery aligns with the findings of Jibril et al. (2023) and Ehiedu and Imoagwu (2022), who similarly concluded that firm size does not have a substantial influence on the financial performance of deposit money banks and oil and gas sector in Nigeria, respectively.

Within the oil and gas sector, the relationship between firm size and financial performance is both positive and negligible. This suggests that bigger companies in this sector do not necessarily have considerably superior financial results. This result is in line with the discoveries made by Jibril et al. (2023) and Ehiedu and Imoagwu (2022) in the Nigerian setting and corresponds with the observation made by Bobenic et al. (2020) in the Slovak metallurgical sector.

The divergent results shown by Wosti and Pradhan (2023), Aribaba et al. (2022), and Olayiwola (2022) in the fields of insurance, oil and gas, and manufacturing, respectively, provide a conflicting perspective. These studies have shown substantial negative, and positive correlations between firm size and financial performance. This indicates that the influence of firm size on financial performance may differ depending on the company and area.

6.8.2 Firm size and working capital management

The regression analysis results provide unique insights into the correlation between firm size and working capital management in three selected sectors in Nigeria. The study indicates that firm size has a beneficial effect on working capital management in the consumer goods sector, but this effect is not statistically significant. This means that although bigger businesses in this sector may have more extensive working capital, the association between firm size and working capital is not strong enough to be considered statistically significant. This discovery is consistent with the research conducted by Chasha et al. (2022), which found that firm size had a beneficial influence on the working capital management in small and medium firms in Kenya. The absence of statistical significance in the consumer goods sector suggests that other variables, such as industry dynamics or management practices, may potentially have a significant impact on working capital management.

The correlation between firm size and working capital management in the financial sector suggests that bigger companies in this field often exhibit more effective methods in managing their working capital. This conclusion aligns with the research conducted by Moussa (2019) and Qian (2016), which both found a strong and statistically significant correlation between the size of a company and its management of working capital. Moussa's study focused on companies listed on the Egyptian Stock Exchange, while Qian's study examined Chinese companies. This observed association may be attributed to the banking sector's focus on liquidity and capital efficiency.

The adverse but substantial influence of firm size on working capital management in the oil and gas sector stands out as a notable divergence from other industries. This discovery implies that bigger companies in the oil and gas sector may have difficulties in effectively

optimising their working capital. The outcome of this study contradicts the conclusions drawn by Onaolapo and Kajola (2015), who observed a notable positive correlation between the size of a company and its management of working capital in Nigerian enterprises. The peculiar pattern seen in the oil and gas industry may be attributed to its distinctive operational and financial features, including high capital intensity and fluctuating commodity prices.

The results align with the studies conducted by Chasha et al. (2022), Moussa (2019), Qian (2016), and Onaolapo and Kajola (2015), providing more evidence that firm size has a significant role in determining how it manages its working capital. Nevertheless, Tjandra et al. (2022) provide a contradictory viewpoint by reporting an inverse outcome for manufacturing companies in Indonesia and the Philippines. These differences emphasise the need of taking into account industry-specific circumstances and geographical differences when evaluating the influence of firm size on the working capital management.

6.8.3 Leverage and financial performance

The regression findings provide a detailed and subtle understanding of the correlation between leverage and financial performance of the selected sectors considered in the study in Nigeria. Within the consumer goods sector, the limited and non-significant effect of leverage on financial performance implies that the use of debt financing may not have a substantial influence on firms' financial results in the sector. This discovery is consistent with the findings of Aribaba et al. (2022) in the oil and gas industry and Olayiwola (2022) in the manufacturing industry. Both studies revealed positive but statistically insignificant correlations between leverage and financial performance.

Conversely, the research demonstrated that leverage has a detrimental and substantial effect on the financial performance of the financial sector in Nigeria. Consequently, increased levels of debt may have a negative impact on the financial performance of companies operating in this sector. The findings align with the conclusions documented by Jibril et al. (2023) regarding deposit money banks in Nigeria. These findings indicate that leverage may have diverse impacts on financial performance within distinct areas of the financial system.

Within the oil and gas sector, greater levels of debt are linked to lower financial results, indicating that leverage has a negative and substantial influence on the sector's financial performance. The result aligns with the discoveries made by Aribaba et al. (2022) within the same field, demonstrating a persistent trend of the adverse influence of leverage on the financial performance inside Nigeria's oil and gas sector.

The supplementary literature offers more context for these results. Research conducted by Aribaba et al. (2022) on oil and gas sector, Olayiwola (2022) on manufacturing firms, and Kartiningsih and Daryanto (2020) on food and beverage companies in various locations have shown that there is a positive correlation between leverage and financial performance. However, a discrepancy develops when comparing these results with research conducted on deposit money banks (Jibril et al., 2023), insurance companies (Ajao and Ogieriakhi, 2018), and corporate enterprises (Dahmash et al., 2021), since these studies have shown either minor or negative associations.

6.8.4 Leverage and working capital management

The regression findings provide insight into the relationship between leverage and working capital management within the three selected sectors in Nigeria. The persistent detrimental and substantial effect of leverage on the working capital management of the consumer goods, finance, and oil and gas sectors suggests that increased levels of debt may hinder the effectiveness of managing working capital in these sectors.

Within the consumer goods sector, increased reliance on debt may provide issues for companies in effectively managing their working capital. This might hinder their ability to optimise current assets and liabilities, which are crucial for maintaining efficient operating cycles. This discovery is consistent with the results made by Rajabi (2016) in China, who also found that the influence of leverage on working capital management was not substantial. The existence of a comparable trend across diverse nations and sectors indicates that the correlation between leverage and working capital management is intricate and impacted by several variables.

In contrast to Moussa's (2019) results in Egypt, which revealed a positive correlation between leverage and working capital management, the present research demonstrates

a detrimental influence within the Nigerian setting. The discrepancy may arise from industry-specific factors, geographical disparities, or discrepancies in the financial structures and managerial approaches of companies in the two nations.

The study's findings reveal a notable and adverse influence of leverage on working capital management within the financial sector. These results contradict the conclusions made by Onaolapo and Kajola (2015) in Nigeria, who saw a favourable correlation. The contrasting outcomes underscore the significance of taking into account industry-specific variables and contextual intricacies when evaluating the influence of leverage on the management of working capital.

The findings of Tjandra et al. (2022), which indicate a negative and statistically significant impact of leverage on working capital management in Indonesia and the Philippines, imply that the association between leverage and working capital management could differ in diverse economic and regulatory contexts.

The literature that examines the relationship between leverage and working capital management presents a varied and nuanced perspective, highlighting the intricate nature of these interactions. While some research, such as Rajabi (2016), indicate that there are no significant or detrimental effects, others, such as Moussa (2019) and Onaolapo and Kajola (2015), emphasise beneficial associations. The conflicting results highlight the need for more investigation to reveal the fundamental processes that influence the connection between leverage and working capital management in various contexts.

6.8.5 Operating cycle and financial performance

An examination of the effect of the operating cycle on the financial performance of listed companies in Nigeria yields significant insights into how the effectiveness of operating cycles affects financial results in various sectors. The findings demonstrate diverse correlations between the operational cycle and financial performance in the consumer goods, finance, and oil and gas sector.

Within the consumer goods sector, there is a clear and substantial correlation between the operating cycle and financial performance. Companies that have shorter operating cycles often demonstrate superior financial performance. A reduced operating cycle

results in expedited transformation of investments in inventories and other resources into cash flows generated by sales. This discovery is consistent with the findings presented by Ehiedu and Imoagwu (2022) in the oil and gas sector, highlighting the wider relevance of the correlation between operating cycle and financial performance.

In contrast, within the financial sector, the operating cycle has a beneficial effect on financial performance, but this effect is not statistically significant. The absence of statistical significance implies that variables other than the speed of operating cycles may have a greater influence on financial performance in the financial sector. This discovery emphasises the firm-specific characteristics of these connections and the need for subtle interpretations.

Within the oil and gas sector, a longer operating cycle has a positive and substantial influence on financial performance, suggesting that businesses with extended operating cycles are likely to achieve superior financial success. This discovery presents a contradiction to the outcomes seen in the consumer goods sector, emphasising the unique dynamics that are peculiar to this sector. The correlation between the oil and gas sector may be ascribed to the distinctive attributes and operational necessities of companies within this sector.

The research conducted by Ehiedu and Imoagwu (2022) provides more evidence to support the assertion of the significant impact of the operating cycle on financial performance, specifically within the oil and gas sector. Comprehending the influence of the operating cycle is essential for firms to maximise their management of working capital, maintain a balance in liquidity requirements, and improve overall financial effectiveness.

The intricate connections found in this research highlight the intricate nature of variables that impact financial performance in many sectors. Consumer goods companies may get benefits from a shorter operating cycle, however financial sector companies may be subject to extra concerns. The favourable influence of an extended operating cycle on financial performance within the oil and gas sector implies that companies in this sector may give precedence to strategic investments and operational endeavours that provide long-term benefits.

6.8.6 Operating cycle and working capital management

The study's results provide useful insights into the relationship between the operating cycle and working capital management in the selected sectors within the Nigerian context. The investigation uncovers intricate connections, with diverse effects identified in the consumer goods, finance, and oil and gas sector.

Within the consumer goods sector, there is a clear and important impact between the operating cycle and the management of working capital. This correlation indicates that companies with longer operating cycles often have more efficient procedures in managing their working capital. The discovery is consistent with the findings presented by Gooneratne and Jayasinghe (2022) in Sri Lanka, highlighting the wider significance of the operating cycle as a factor influencing effective management of working capital.

In the financial sector, the operating cycle has a favourable influence on working capital management, although this benefit is not large. The absence of statistical significance suggests that variables other than the operating cycles have a greater influence on the working capital management techniques in financial sector. This result is consistent with the research conducted by Ahmed (2016) in Saudi Arabia and Tjandra et al. (2022) in Indonesia and the Philippines, which emphasises the varied factors that impact working capital management in the banking industry.

Within the oil and gas sector, there is a clear and substantial impact between the operating cycle and the management of working capital. This implies that organisations with longer operating cycles generally exhibit more proficient control over their working capital. This conclusion aligns with the wider body of research, including Moussa's (2019) study in Egypt, which recognised the operating cycle as a crucial element impacting the management of working capital in the oil and gas sector.

6.8.7 Sales growth and financial performance

The regression analysis results provide insights into the relationship between sales growth and financial performance of the selected sector in Nigeria. The report offers sector-specific observations on the impact of sales growth on the financial performance of the consumer goods, financial, and oil and gas sectors.

Within the consumer goods sector, the statistical findings indicate that the increase in sales has a beneficial effect on financial performance, although this effect is not considered substantial. These findings indicate that fluctuations in sales growth may not reliably forecast changes in financial performance within this sector. The present discovery aligns with the findings of Ehiedu and Imoagwu (2022) in their investigation of listed oil and gas firms in Nigeria, whereby they also observed that sales growth did not exhibit a significant correlation with financial performance. Furthermore, the research conducted by Cheong and Hoang (2021) in Singapore and Hong Kong supports this notion, demonstrating an insignificant influence of sales growth on financial performance.

Conversely, the financial sector has a strong and meaningful relationship between sales growth and the financial performance. Within financial companies, improvements in financial performance are correlated with increases in sales growth. This discovery presents a contradiction to the findings of Olayiwola (2022) and Efuntade and Akinola (2020) in Nigeria, since they observed a notable influence of sales growth on the financial performance of manufacturing companies. The discrepancy in results underscores the industry-specific character of the relationship between sales growth and financial performance.

In the oil and gas sector, the research reveals a favourable correlation between sales growth and financial performance, but this correlation is not statistically significant. This is consistent with the findings of Ehiedu and Imoagwu (2022), highlighting the fact that the association is exclusive to certain sectors. The disparity in the results obtained by Olayiwola (2022) indicates that the influence of sales growth on financial performance might differ considerably between the manufacturing and oil and gas sector within the Nigerian context.

6.8.8 Sales growth and working capital management

The examination of the impact between sales growth and working capital management of the selected sectors in Nigeria provides detailed insights into how this crucial company performance is affected by fluctuations in sales growth. The research especially focuses on the consumer goods, finance, and oil and gas sectors, offering sector-specific insights on the influence of sales growth on working capital management.

The results suggest that there is a considerable negative impact of sales growth on the management of working capital in the consumer goods companies. Consequently, in this particular sector, a rise in sales growth is linked to a decline in the effectiveness of managing working capital. This finding is consistent with the findings of Onaolapo and Kajola (2015), who observed that sales growth does not have a significant impact on the management of working capital in firms listed on the Nigeria Stock Exchange. In the same vein, Rajabi (2016) found no significant association between sales growth and the management of working capital in Chinese enterprises operating in the electronic sector. The consistent findings across several research indicate that, in the consumer goods sector, the increase of sales may not play a crucial role in determining the effectiveness of managing working capital.

Conversely, the financial sector has a favourable although negligible impact of sales growth on the management of working capital. Therefore, it may be inferred that fluctuations in sales growth within financial institutions do not much affect the effectiveness of working capital management. This study contradicts the findings provided by Ahmed (2016) in Saudi Arabia, where a strong positive correlation was discovered between sales growth and working capital management. The disparity indicates that the impact of sales growth on working capital management may differ across various sectors and geographical circumstances.

The research concludes that there is a negligible and adverse impact of sales growth on the management of working capital in the oil and gas sector. These findings indicate that fluctuations in sales growth have little influence on the effectiveness of working capital management in this sector. This is consistent with the results of Moussa's (2019) study, which revealed that there is no substantial beneficial impact of sales growth on the management of working capital in industrial businesses listed on the Egyptian Stock Exchange. The concurrent findings suggest that sales growth may not play a significant role in determining the efficacy of working capital management in the oil and gas sector.

6.8.9 GDP and financial performance

The regression results examines the impact of GDP on the financial performance of consumer goods, finance, and oil and gas sectors listed in Nigeria, leading to interesting

discoveries. The results suggest that GDP has a negative and statistically insignificant effect on understanding and forecasting the financial performance in these sectors.

In the consumer goods sector, the lack of statistical significance indicates that changes in GDP do not have a significant influence on explaining or predicting financial performance. The findings align with the research conducted by Sucipto et al. (2022) in Indonesia, which demonstrated that the gross domestic product had no substantial impact on the financial performance of consumer goods companies. Similarly, the study corroborates the findings of Girma (2022) in Ethiopia, indicating that GDP has a negligible influence on the financial performance of insurance companies. Furthermore, Luitel (2023) found a similar lack of significance regarding the impact of GDP on the financial performance of commercial banks in Nepal. The consistent pattern seen in several studies and industries suggests that GDP may not be a dependable indicator of financial prosperity in the consumer goods sector, irrespective of the geographic location.

In Nigeria, the financial sector has a minimal and statistically insignificant impact on GDP in terms of financial performance. This discovery is consistent with the previous research conducted by Egbunike and Okerekeoti (2018) in Nigeria, which revealed a lack of statistically significant association between GDP and financial performance. The statistics substantiate the notion that GDP alone may not suffice as the only factor in elucidating the disparities in financial performance across different financial institutions. This discovery challenges the notion that economic growth, as measured by GDP, always results in improved financial performance in the financial sector.

Similarly, the limited impact of GDP on financial performance in the oil and gas sector suggests that economic growth, as measured by GDP, may not significantly affect financial performance in this sector. These findings align with the results of a research carried out by Gikombo and Mabugua (2018) in Kenya, which concluded that there was no notable association between GDP and financial performance in the Kenyan context. The oil and gas companies, being heavily influenced by global market dynamics and commodity pricing, may exhibit unique characteristics that differentiate its financial performance from fluctuations in local GDP.

Unlike the current investigation, Kola Benson et al. (2022) found a strong and statistically significant relationship between GDP and the financial performance of publicly listed companies in South Africa. The impact of GDP on financial performance varies depending on the region and sector, and is impacted by contextual nuances and industry-specific factors.

6.8.10 GDP and working capital management

The regression analysis findings for the three chosen sectors indicate that the GDP does not have a significant impact on the management of working capital for companies listed in the consumer goods, finance, and oil and gas sectors in Nigeria. The findings indicate that the consumer goods sector has a positive coefficient, suggesting that it has no significant impact. On the other hand, both the financial and oil and gas sectors have negative coefficients, which further supports the conclusion that GDP does not play a significant role in explaining or predicting working capital management.

The lack of a substantial influence of GDP on the management of working capital in the consumer goods sector is consistent with the findings of Gooneratne and Jayasinghe (2022) in their research conducted in Colombia, as well as Qian (2016) in China. These studies also found that GDP had no substantial impact on the working capital management methods of publicly traded corporations. The uniformity seen in many research and geographical areas indicates that the effectiveness of working capital management in the consumer goods sector may not be primarily influenced by economic growth, as measured by GDP.

In contrast to the present research results, Farooq et al. (2023) in Pakistan and Oseifuah (2016) in South Africa have shown that GDP has a positive and substantial impact on the working capital management of publicly traded companies. This disparity underscores the need of taking into account geographical and sector-specific differences in the correlation between GDP and the management of working capital. The diverse effects seen in various research may be attributed to distinct economic circumstances, regulatory regimes, and industry dynamics.

The presence of negative coefficients in both the financial and the oil and gas sectors in Nigeria reinforces the overall conclusion that GDP has no impact on working capital

management in both sectors. This discovery contradicts the premise that economic expansion automatically leads to enhanced working capital efficiency in these sectors. The findings of Rajabi's (2016) research conducted in China indicate a large and negative impact of GDP on working capital management. These results are consistent with the present findings, indicating that the connection between economic indicators and working capital management is intricate and contingent on the specific circumstances.

6.8.11 InfR and financial performance

The research of the influence of InfR on the financial performance of companies listed in the consumer goods, finance, and oil and gas sectors in Nigeria showed that there is no significant impact of InfR on the financial performance of the listed companies in Nigeria. The comprehensive results reveal a favourable coefficient for companies operating in the consumer goods sector, whereas companies in the financial sector and the oil and gas sector exhibit a detrimental coefficient. Within the study's parameters, it is evident that the InfR does not have a substantial impact on explaining or predicting the financial performance in these sectors.

The present results align with the conclusions drawn by Majeed (2022) and Suseno (2020), who documented in their individual investigations that the inflation rate had an adverse and statistically insignificant effect on financial performance. Furthermore, research undertaken by Sucipto et al. (2022), Kola Benson et al. (2022), Girma (2022), and Luitel (2023) in Iraq, Indonesia, South Africa, Ethiopia, and Nepal, respectively, also concluded that there is no significant correlation between the inflation rate and financial performance. The consistency of this tendency across several studies and locations highlights the shared nature of the observed pattern, indicating that, at least within the sectors examined, the inflation rate may not have a significant impact on financial performance.

Nevertheless, it is crucial to recognise the discrepancy in results from previous research conducted by Ally (2022), Al-Sharif (2023), Egbunike and Okerekeoti (2018), Gikombo and Mbugua (2018), and Tahir (2016), who found that the inflation rate had a notable and positive effect on the financial performance of publicly traded companies. In contrast, Ogunlade et al. (2023) observed a detrimental although noteworthy influence of the

inflation rate on the financial performance of publicly traded companies. The aforementioned differences emphasise the context-dependent nature of the correlation between inflation rate and financial performance.

The contradictory findings highlight the significance of taking into account the dynamics of the sector, geographical settings, and individual attributes of the companies being examined. Various factors, including the kind of products or services offered, market circumstances, and the capacity of companies to adjust pricing in reaction to inflation, might contribute to the diverse effects reported in various research. The correlation between inflation rate and financial performance is complex, requiring more study to enhance our comprehension of the underlying processes.

6.8.12 InfR and working capital management

The regression analysis in this research provides valuable insights into the correlation between the InfR and the management of working capital in publicly traded companies across the selected sectors in Nigeria. The results suggest that the InfR has a negligible and statistically insignificant impact on the management of working capital in companies operating in the consumer goods and the financial sectors. Conversely, a favourable but statistically insignificant impact on the working capital management of companies in the oil and gas sector was seen.

The results are consistent with the studies conducted by Oseifuah (2016), Gooneratne and Jayasinghe (2022), and Rajabi (2016), which also concluded that the inflation rate did not have a significant effect on working capital management. Oseifuah's research in South Africa, Gooneratne and Jayasinghe's research in Colombia, and Rajabi's research in China all add to the increasing evidence that the inflation rate may not have a significant impact on working capital management practices in different economic contexts.

In contrast to the results of the present study and the aforementioned research, Farooq et al. (2023) documented a substantial adverse effect of the inflation rate on the working capital management of publicly traded firms in Pakistan. This disparity underscores the fact that the connection between inflation rate and working capital management is dependent on the unique circumstances. Differences in the reported effect across various

nations and regions may be attributed to economic, regulatory, and industry-specific variables

The absence of a substantial correlation between inflation rate and working capital management in the consumer goods and financial sectors suggests that companies in these sectors may not be substantially modifying their methods for managing working capital in response to fluctuations in inflation. These variables may include organisations' capacity to adapt prices, effectively control expenses, and successfully traverse economic situations without significant interruptions to their working capital.

Within the oil and gas sector, the presence of a positive impact that is not statistically significant indicates a complex and subtle link. Companies in this sector may be using working capital management strategies that are less affected by fluctuations in inflation rates or may possess special operational attributes that reduce the effect of inflation on working capital.

6.8.13 ExcR and financial performance

The regression results reveal that the ExcR has a statistically insignificant impact on the financial performance of listed companies in the consumer goods, finance, and oil and gas sectors in Nigeria. The consumer goods sector had a negative coefficient, whilst the financial sector and the oil and gas sector displayed positive coefficients.

The results are consistent with the findings reported by Ruhomaun et al. (2019) and Egbunike and Okerekeoti (2018) in their separate research done in Malaysia and Nigeria. Both research concurred that the Exchange Rate had a negligible effect on financial performance. These findings indicate that changes in exchange rates may not have a substantial impact on the financial performance of these sectors in Nigeria. The insignificance may result from companies using efficient risk management measures, such as hedging, or maintaining diverse revenue sources that reduce the influence of currency fluctuations.

In contrast to the aforementioned results, Gikombo and Mbugua (2018) discovered a favourable and statistically significant correlation between the Exchange Rate and financial performance in their research done in Kenya. In South Africa, Kola Benson et al. (2022) discovered a strong and statistically significant correlation between the Exchange Rate and corporate performance. The discrepancies in the results emphasise the significance of taking into account country-specific and industry-specific variables that might impact the correlation between exchange rates and financial performance.

Conversely, Ally (2022) and Luitel (2023) conducted independent research in Tanzania and Nepal, respectively, and found that the Exchange Rate had a large and adverse impact on the financial performance of publicly traded companies. The presence of conflicting results highlights the intricate connection between exchange rates and financial performance. This connection is subject to the effect of several variables, such as economic circumstances, industry attributes, and organisations' currency risk management techniques.

6.8.14 ExcR and working capital management

The regression analysis indicates that the ExcR has a beneficial effect on the working capital management of companies in the consumer goods, finance, and oil and gas sectors in Nigeria. However, this effect is not statistically significant. Consequently, variations in exchange rates, regardless of whether they rise or fall, may not result in substantial alterations to the company's strategies for managing its working capital.

The absence of statistical significance indicates that exchange rate fluctuations may not have a significant impact on how companies in the selected sectors in Nigeria handle their working capital. This conclusion suggests that companies in these sectors have successfully adopted risk management methods or have other means to deal with currency changes.

These results differ with the conclusions of Oseifuah (2016), which stated that the Exchange Rate had a considerable impact on the working capital management of publicly traded firms in South Africa. The variations in results might be ascribed to discrepancies

in the economic contexts, industry dynamics, or distinct firm attributes in Nigeria as opposed to South Africa.

The literature indicates that the influence of ExcR on working capital management may be intricate and diverse. Companies might use several financial instruments or operational techniques to alleviate the impact of currency changes. Moreover, the extent of engagement with global markets, import or export operations, and the characteristics of industrial supply chains may profoundly impact the impact of exchange rate fluctuations on working capital.

The little influence of exchange rates on working capital management in the present investigation emphasises the need for companies to implement customised strategies to handle currency risk according to their individual circumstances. Furthermore, it emphasises the need of taking into account geographical and industry-specific variables when examining the correlation between exchange rates and working capital management.

6.9 Managerial implications

The extensive regression analysis results provide useful insights for management decision-making in the consumer goods, finance, and oil and gas sectors in Nigeria. These consequences are vital for improving financial performance and maximising the management of working capital. The study results have many management implications.

Firm Size and financial performance

The study emphasises that bigger companies in the consumer goods sector do not generally demonstrate better financial success. Managers should prioritise issues other than scale, including as operational efficiency, market dynamics, and strategic positioning. Attaining financial success necessitates adopting a comprehensive strategy that takes into account several factors that contribute to overall efficiency.

Similarly, the research suggests that the firm size in the financial sector does not always lead to improved financial results. Managers need to investigate supplementary tactics, such as improving service quality and promoting innovation, in order to stimulate financial prosperity.

In the oil and gas sector, there is a tiny but positive correlation between the firm size and its financial performance. This implies that bigger companies may not have a major advantage over smaller ones in terms of performance. Managers must give priority to optimising operational efficiency and being able to respond to changes in the market.

Leverage and financial performance

The study highlights the subtle influence of leverage on financial performance in different sectors. Within the consumer goods sector, where the impact of leverage is minimal and not large, firms should thoroughly assess their utilisation of loan funding. Debt-related strategic choices should be in accordance with the precise financial characteristics of the sector.

On the other hand, the financial sector has a harmful and significant impact of leverage on financial performance. Financial institutions must prioritise prudent debt management due to the potential detrimental effect of elevated debt levels on financial performance. Decision-makers must show prudence and apply efficient solutions to control and optimise debt levels.

Decision-makers in the oil and gas sector should exercise prudence when it comes to leveraging, since greater levels of debt are associated with worse financial outcomes. The results highlight the significance of maintaining an equilibrium between debt utilisation and financial success, with an emphasis on implementing sustainable financial measures.

Operating cycle and financial performance

The study examines the influence of the operating cycle on financial performance, uncovering sector-specific associations. Superior financial performance is correlated with shorter operating cycles in the consumer goods sector. This highlights the need of simplifying supply chain operations and enhancing inventory management to accelerate the movement of cash.

In the financial sector, the positive but statistically negligible effect of the operating cycle on financial performance implies that variables other than operating cycle may have a

more important impact. Managers should take into account the unique attributes of their company to make detailed interpretations and investigate other factors that contribute to financial performance in the financial companies.

Extended operating cycle within the oil and gas sector have a significant and favourable impact on financial performance. Companies should use their prolonged cycles to achieve exceptional financial success, while acknowledging the distinct dynamics and operational requirements of the sector.

Sales growth and financial performance

The study provides valuable insights into the intricate correlation between sales growth and financial performance within the selected sectors. In the consumer goods sector, the effect of sales growth is advantageous but not significant. It is important for decision-makers to acknowledge that only relying on sales growth may not consistently indicate improvements in financial performance. Companies should strive to achieve a harmonious equilibrium between tactics aimed at increasing sales and a strong emphasis on cost control and operational efficiency.

The financial sector highlights the significant correlation between sales growth and financial performance, underscoring the need of customer-centric methods. Financial institutions should prioritise the acquisition and retention of consumers as a crucial factor in achieving better financial performance.

In the oil and gas sector, the positive but statistically insignificant association between sales growth and financial performance suggests that sales growth may not be a reliable indicator of changes in financial outcomes. Oil and gas companies need take into account other elements beyond only increasing income in order to achieve long-term financial success.

Macroeconomic factors (GDP, InfR and ExcR)

The study investigates how macroeconomic variables influence financial performance, uncovering distinct patterns within the selected sectors. The consumer goods sector, the little effect of GDP implies that companies may not be much swayed by broader economic

circumstances. When making decisions, managers should give priority to industry-specific considerations and internal competencies.

The InfR has a little influence on financial performance, suggesting that companies have adequate measures in place to manage difficulties connected to inflation. Decision-makers should persist in monitoring inflation while simultaneously prioritising internal tactics that reduce the influence of inflation on financial results.

The impact of ExcR on financial performance is shown to be negligible, indicating the effectiveness of currency risk management. It is advisable for companies to maintain vigilance over currency rates when implementing risk management strategies. The results emphasise the significance of companies using techniques to manage currency fluctuations and mitigate their influence on financial performance.

Working capital management

The study offers valuable insights on the relationship between the firm size, leverage, the operating cycle, sales growth, and the management of its working capital. Within the consumer goods and financial sectors, the firm size has a positive impact on the management of working capital, but this effect is not statistically significant. Established corporations should prioritise the optimisation of their working capital cycles to ensure ongoing operational efficiency.

In contrast, the negative but significant impact of firm size on working capital management in the oil and gas sector implies that bigger companies may have difficulties in efficiently maximising their working capital. Decision-makers should prioritise the implementation of effective working capital management techniques specifically designed to suit the distinctive characteristics of the oil and gas sector.

The adverse and significant impact of leverage on working capital management across several sectors underscores the need of prudent debt management. Companies should carefully manage their usage of debt to achieve the most effective working capital management, taking into account the unique financial characteristics of their various sectors.

The significant influence of the operating cycle on working capital management in the consumer goods and oil and gas sectors implies that companies with longer operating cycles may exhibit superior efficiency in managing their working capital. Decision-makers should use longer operating cycles to achieve more favourable working capital results, while acknowledging the ramifications that are particular to each sector.

The significant adverse effect of sales growth on working capital management in the consumer goods sector suggests that an increase in sales growth is associated with a decrease in the efficiency of handling working capital. Companies must strike a balance between development objectives and effective working capital management procedures in order to maintain long-term financial stability.

The absence of substantial influence from GDP, InfR, and ExcR on working capital management suggests that enterprises in the chosen industries may possess efficient techniques to handle these macroeconomic factors. For effective management of working capital, decision-makers should prioritise industry-specific considerations and internal skills, recognising the need for a nuanced approach.

6.10 Chapter summary

The present chapter presented and discussed an analysis of the outcomes obtained from the sample of the listed companies under the three selected sectors as considered in the study. The investigation employed panel data analysis to explicate the findings of the research. This study examined the regression outcomes of the sampled companies on pages 161–164, 178–181, and 195–198 during the period under review to evaluate the research hypotheses and research objectives of the study. The findings of the study were discussed in detail.

The study's findings revealed that firm-specific characteristics have the greatest impact on the financial performance of the oil and gas sector and the financial sector in Nigeria with two variables each having significant impact. These are LEV and OC for oil and gas sector, and LEV and SG for financial sector. Lastly, it was found that only OC impact the financial performance of consumer goods sector in Nigeria. This mean that firm-specific

characteristics have limited impact on the financial performance of the consumer goods sector compared to the oil and gas sector and the financial sector in Nigeria.

The regression findings also demonstrates that three significant impacts primarily reflect the impact of firm-specific characteristics on the working capital management of the oil and gas sector and the consumer goods sector in Nigeria. The three significant impact are FZ, LEV and OC (oil and gas sector) LEV, OC and SG (consumer goods sector). Lastly, the financial sector in Nigeria has only two significant impact, these are FZ and LEV. This also implies that firm-specific characteristics have limited impact on the working capital management of the financial sector compared to the oil and gas sector and the consumer goods sector in Nigeria.

Finally, the regression results revealed that macroeconomic variables has no significant impact on the financial performance and working capital management of the three selected sectors in Nigeria.

In conclusion, the researcher's findings concluded that firm-specific characteristics have the biggest impact on the financial performance and working capital management of the oil and gas sector in Nigeria, followed by the financial sector, and finally the consumer goods sector, while macroeconomic variables does not impact the financial performance and working capital management of the oil and gas sector, the financial sector and the consumer goods sector in Nigeria.

CHAPTER 7: SUMMARY, CONCLUSION AND RECOMMENDATIONS

7.1 Introduction

This chapter provides a summary of the key findings of the study. Further contributions of the study are discussed, and finally, a direction for further research is suggested, and recommendations are offered.

7.2 Summary of the research findings

The study used a comparative regression analysis to investigate the influence of firm-specific characteristics and macroeconomic factors on the financial performance and working capital management of the consumer goods, finance, and oil and gas sectors in Nigeria. The research aimed to achieve four primary goals, which included analysing the sectors separately and assessing their respective reactions to different influences.

The results concerning firm size indicate that bigger companies in the consumer goods sector may not constantly surpass their smaller counterparts, highlighting the significance of variables other than size in attaining financial success. In the realm of finance, mere size may not serve as a dependable indicator of financial success, hence compelling managers to delve into supplementary techniques. In the oil and gas sector, the correlation between firm size and financial performance is positive but insignificant, indicating the importance of focusing on operational efficiency and flexibility.

The intricate influence of leverage on financial performance emphasised the need of smart debt management. Within the consumer goods sector, the use of leverage had a little impact, however the financial sector saw a harmful effect, underscoring the need of prudent debt management. Within the oil and gas sector, there is a correlation between increased levels of debt and worse financial performance, indicating the need of maintaining a proper balance in debt utilisation.

The impact of the operating cycle on financial performance differed across sectors. Superior financial performance in the consumer goods sector was linked to shorter operating cycles, highlighting the need of efficient supply chain procedures. The financial sector had a positive effect, albeit it was not statistically significant, suggesting the

presence of other crucial elements. Extended operating cycles in the oil and gas sector have a significant and favourable impact on financial performance, indicating that companies should take advantage of these longer cycles.

The influence of sales growth on financial performance was diverse, with the consumer goods sector seeing a positive albeit moderate impact. The financial sector exhibited a robust correlation between sales growth and financial performance, highlighting the significance of customer-centric methods. The association seen in the oil and gas sector was favourable, but it was not statistically significant. This suggests that other variables beyond revenue growth should be taken into account.

Analysis of macroeconomic indicators indicated that GDP had a little effect on the consumer goods sector, implying that companies in this sector may not be much impacted by general economic circumstances. The inflation rate and exchange rates had little effects, suggesting efficient means for addressing difficulties connected to inflation and managing currency risk.

The conclusions of the working capital management study emphasised the sector-specific consequences. The size of a firm had a positive impact on the management of working capital in the consumer goods and finance sectors. However, bigger companies in the oil and gas sector had difficulties in optimising their working capital. The use of leverage has a significant adverse effect across all sectors, underscoring the need of meticulous debt management. The management of working capital in the consumer goods and oil and gas sectors is greatly impacted by the operating cycle. This implies that companies with longer cycles may have more effective management.

The analysis uncovered a significant adverse influence of sales growth on the management of working capital in the consumer goods sector, underscoring the need of maintaining a harmonious equilibrium between growth plans and effective working capital management. The financial sector had a little effect, but the oil and gas sector had a minimal but negative effect.

The influence of macroeconomic factors on working capital management was minimal, since the GDP had no discernible impact on the selected sectors. The inflation rate had

a little effect, while the exchange rates had a minor affect, indicating the need for effective techniques in handling these factors.

The study used a positivist mindset and a quantitative ex-post facto research approach, using secondary data sourced from publicly accessible yearly reports. A simple random sampling technique was used to choose a representative sample from the population of listed companies.

7.3 Conclusion

An attempt has been made in the present study to investigate the impact of firm-specific characteristics and macroeconomic variables on financial performance and working capital management of listed companies under the three selected sectors in Nigeria for the 10 year period 2013–2022. Based on the empirical analysis of this study, the researcher reached the following conclusions.

The research revealed a number of essential observations. Firstly, it was emphasised that firm size is significant, indicating that bigger companies may not always perform better than smaller ones. Managers must employ a comprehensive strategy that goes beyond size and takes into account operational efficiency, market dynamics, and strategic positioning.

The use of leverage has been shown to have subtle impacts across the selected sectors, highlighting the essential significance of strategic debt management. Although leverage had a little influence on financial performance in the consumer goods sector, its harmful consequences in the financial sector highlight the need for careful debt management. Within the oil and gas sector, there exists a clear inverse relationship between increased levels of debt and worse financial performance, underscoring the need of maintaining a careful equilibrium in debt utilisation.

The operating cycle has been identified as a crucial aspect that affects financial success. Superior financial results in the consumer goods sector were linked to shorter operating cycles, highlighting the need of efficient supply chain procedures. The financial sector had a positive impact, albeit it did not reach statistical significance, indicating the

involvement of other key elements. In the oil and gas sector, there was a strong and positive relationship between longer operating cycles and better financial performance.

The sectors saw diverse effects as a result of the sales growth. The impact on the consumer goods sector was positive but not significant, while the financial sector demonstrated a robust and significant correlation between sales growth and financial performance. The oil and gas sector showed a positive association, but it was not statistically significant. This suggests that a comprehensive approach is necessary to understand the aspects that contribute to financial performance.

The financial performance was little affected by macro-economic variables, and the effect of GDP on the selected sectors was found to be minor. The impact of inflation rate and exchange rates was minimal, indicating efficient strategies for addressing inflation-related issues and managing currency risk.

The consequences of working capital management reveal sector-specific dynamics. Although firm size had a positive impact on the management of working capital in the consumer goods and finance sectors, bigger companies in the oil and gas sector had difficulties in achieving optimisation. The use of leverage has a significant adverse effect across all the selected sector, underscoring the need of prudent debt management. The operating cycle has a substantial impact on the management of working capital in the consumer goods and oil and gas sectors. This implies that companies with longer operating cycles may have more effective management practices.

The influence of sales growth on the management of working capital differed across sectors, with a significant detrimental effect in the consumer goods sector, a little effect in the financial sector, and a minimal yet unfavourable effect in the oil and gas sector.

The influence of macro-economic factors on working capital management was found to be minimal, since there was no notable impact of GDP on the chosen sectors. The inflation rate had a little effect, while the exchange rates had a minor affect, indicating the need for effective techniques in handling these factors.

7.4 Recommendations

Based on the findings of this study, a number of recommendations are made.

1. Managers in the consumer goods sector are recommended to broaden the range of criteria used to assess financial performance, moving beyond only the size of the company. The study emphasises that firm size does not always correlate with its financial performance. To achieve financial success, it is important to prioritise operational efficiency, market dynamics, and strategic positioning, using a comprehensive approach.
2. Financial institutions need to use strategic debt management methods in response to the adverse effects of leverage on financial performance. Financial sector decision-makers must prioritise debt quality and use effective measures to optimise debt levels while maintaining favourable financial results.
3. When it comes to the oil and gas sector, decision-makers should exercise prudence when it comes to leveraging, taking into account the inverse relationship between increased debt levels and worse financial performance. Companies in this sector must have a prudent approach to debt utilisation and implement sustainable financial plans.
4. Consumer goods companies should optimise their supply chain procedures in order to reduce operating cycle. Implementing effective inventory management and optimising the supply chain may result in faster cash flows and enhanced financial success.
5. Due to the significant correlation between sales growth and financial performance in the financial sector, it is essential for financial institutions to prioritise strategies that focus on the needs and preferences of their customers. Acquiring and keeping consumers plays a crucial role in driving better financial results in this sector.
6. Oil and gas companies could proactively adjust their operations to accommodate extended operating cycles, using them to achieve greater financial success. Understanding the distinct dynamics and operational requirements of the sector is crucial for maximising financial success.

7. It is advisable to use efficient risk management solutions to handle macroeconomic factors, such as swings in inflation rate and exchange rate. Implementing proactive risk management strategies helps protect financial performance when confronted with macroeconomic issues.
8. It is recommended to adopt a complex plan for managing working capital, taking into account the unique attributes of the company as well as the special consequences within the sector. It is important to acknowledge and deal with the influence of firm size, debt levels, and operating cycles on the effectiveness of working capital management.
9. Companies must strategically address the influence of sales growth on the management of working capital. Ensuring a harmonious equilibrium between development objectives and effective working capital management methods is crucial in the consumer goods sector. It is essential to maintain efficient working capital techniques in the financial sector, even when sales fluctuate.
10. Regular monitoring of macroeconomic indicators, such as GDP, inflation rate, and exchange rates, is crucial. Companies must to modify their plans in response to changes in economic circumstances, guaranteeing their ability to withstand external obstacles.
11. Promoting investment in data analytics and technology is encouraged in all areas. Utilising sophisticated analytics technologies may provide immediate and accurate information on operational effectiveness, market patterns, and macroeconomic influences, facilitating well-informed and proactive decision-making.
12. Finally, it is important to provide ongoing training and enhance the skills of those responsible for making financial decisions. It is crucial to provide managers with the necessary abilities to handle complex financial situations, evaluate subtle regression analysis results, and adopt policies based on data in order to maintain long-term financial well-being.

7.5 Contribution to knowledge

Some contributions emerged from this study.

1. First, the study contributes to the understanding of the factors that drive the outcome that firm-specific characteristics influence the financial performance and working capital management of companies in the consumer goods sector, the financial sector and the oil and gas sector in Nigeria. It provides empirical evidence of the linkages between firm-specific variables, shedding light on the mechanisms through which these characteristics affect the financial performance and working capital management. The study also contributes to the understanding of how macroeconomic factors affect the financial performance and working capital management in Nigeria.
2. Second, to the best of the researcher's knowledge, the findings will have practical implications for strategic decision-making within the selected companies. Managers and executives should leverage this knowledge to identify and prioritise the firm-specific characteristics that contribute most significantly to financial performance and working capital management. This understanding will inform resource allocation, investment decisions, and operational strategies aimed at enhancing financial performance and optimising working capital management practices.
3. Third, the findings of this study contribute to the body of knowledge by informing policymakers and regulatory bodies on how to design effective policies and guidelines for listed companies by understanding the role of firm-specific characteristics on financial performance and working capital management so as to shape regulations that promote a conducive business environment.
4. The study's findings also contribute to the understanding of how macroeconomic variables affect the management of working capital of listed companies in Nigeria by indicating that changes in macroeconomic variables has no significant impact on the working capital management. This knowledge helps researchers and practitioners grasp

the dynamics between macroeconomic variables and working capital management decisions at the microlevel.

5. The study's contribution to knowledge also extends to academics by providing a foundation for further investigation of the impact of firm-specific characteristics and macroeconomic variables on the financial performance and working capital management of listed companies in Nigeria. Scholars can build upon this study by investigating the applicability of these findings across different companies and contexts.
6. Finally, no study of this nature has done comparative research. This study used three sectors, and their findings were compared to determine which sector is mostly impacted by firm-specific characteristics and macroeconomic variables on the financial performance and working capital management in Nigeria.

7.6 Limitations

This study was conducted only on listed companies in the consumer goods sector, the financial sector, and the oil and gas sector. Accordingly, the results cannot be generalised for all the listed companies operating in Nigeria, which can be ascribed to the unavailability of data for some of these companies.

7.7 Recommended areas for further study

Future research should address the limitations of this study by using all the companies listed on the Nigerian Exchange Group. Several extensions of this study are also possible. First, some listed companies under the three chosen sectors (oil and gas sector, consumer goods sector, and financial sector) were excluded because of the non-availability of data. Therefore, they should be included in future research if data is available. There should be an extension of the years covered to 15 or more years for a better result. The study only touches on three sectors of the economy, which are the oil and gas sector, the financial sector, and the consumer goods sector. Therefore, for future studies, other sectors such as agriculture, ICT, industrial goods, and healthcare, among others, should be studied. The study recommends that studies should consider

companies under the oil and gas sector compares to the financial sector and the consumer goods sector in Nigeria as firm-specific characteristics have the biggest impact on the financial performance and working capital management of the oil and gas, followed by the financial sector and finally the consumer goods sector. Finally, further research should also attempt to investigate non-listed companies in the Nigerian Exchange Group.

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APPENDIX A ETHICAL CLEARANCE



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Economic and Management Sciences Research
Ethics Committee (EMS-REC)

30 August 2021

Prof A Smit
Per e-mail
Dear Prof Smit,

EMS-REC FEEDBACK: 27082021
Student: Ogundare, P (33474036)(NWU-00951-21-A4)
Study leader: Prof A Smit – PhD in Business Administration

Your ethics application on, *Investigating the impact of firm-specific characteristics and macroeconomic variables of financial performance and working capital management of listed companies in Nigeria*, which served on the EMSREC meeting of 27 August 2021, refers.

Outcome:

Approved as a minimal risk study. A number **NWU-00951-21-A4** is given for one year of ethics clearance.

Please note that the ethics approval of this application is subject to the Covid-19 protocols.

Kind regards,

Mark

Rathbone

Digitally signed by Mark Rathbone
DN: cn=Mark Rathbone, o=North-
West University, ou=Business
management,
email=mark.rathbone@nwu.ac.za,
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Date: 2021.08.31 10:13:17 +02'00'

Prof Mark Rathbone
Chairperson: Economic and Management Sciences Research Ethics Committee
(EMS-REC)

APPENDIX B
LANGUAGE EDITOR'S LETTER

Barbara Wood
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E-mail: woodlandsmedia@gmail.com
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Bergsig, George 6529
Western Cape, South Africa

To whom it may concern

Editing Certificate

I, Barbara Wood, hereby confirm that I am a registered professional researcher and editor and have edited the following academic document:

Investigating the impact of firm-specific characteristics and macroeconomic variables on financial performance and on working capital management of listed companies in Nigeria

PK Ogundare
orcid.org 0000-0003-3307-3727

**Thesis accepted in fulfilment of the requirements for the degree
Doctor of Philosophy in Economic and Management Sciences with Business
Administration
at the North-West University**

Promoter: Prof Anet Smit
CO-Promoter: Prof Martin Botha
Student number: 33474036

June 2023

Signed:

Barbara Wood



APPENDIX C

	Names of Listed Companies with complete Financial Statement
	Financial sector
1.	Abbey mortgage bank
2.	Access holding bank
3.	Africa prudential plc.
4.	African alliance insurance plc.
5.	Aiico insurance plc.
6.	Axamansard insurance plc.
7.	Consolidated hallmark insurance plc.
8.	Cornerstone insurance plc.
9.	Coronation insurance plc.
10.	Custodian investment plc.
11.	Eco bank transnational incorporated
12.	FBN holdings plc.
13.	FCMB group plc.
14.	Fidelity bank plc.
15.	Guaranty trust holding company plc.
16.	Guinea insurance plc.
17.	Infinity trust mortgage bank plc.
18.	International energy insurance plc.
19.	Jaiz bank plc.
20.	Lasaco assurance plc.
21.	Linkage assurance plc.

22.	Living trust mortgage bank plc.
23.	Mutual benefits assurance plc.
24.	NEM insurance plc.
25.	Niger insurance plc.
26.	NPF microfinance bank plc.
27.	Prestige assurance plc.
28.	Regency assurance plc.
29.	Royal exchange plc.
30.	Sovereign trust insurance plc.
31.	Stanbic IBTC holdings plc.
32.	Sterling bank plc.
33.	Sunu assurances Nigeria plc.
34.	Union bank Nigeria plc.
35.	United bank for Africa plc.
36.	United capital plc.
37.	Unity bank plc.
38.	Universal insurance plc.
39.	Veritas kapital assurance plc.
40.	Wema bank plc.
41.	Zenith bank plc.
	Oil and Gas sector
1.	Arдова plc.
2.	Conoil plc.
3.	Eterna plc.

4.	Japaul gold & ventures plc.
5.	MRS oil Nigeria plc.
6.	RAK unity petroleum company Plc.
7.	Seplat energyPlc.
8.	Total energies marketing Nigeria Plc.
	Consumer goods sector
1.	Cadbury Nigeria Plc.
2.	Champion breweries. Plc.
3.	Dangote sugar refinery Plc.
4.	Flour mills Nigeria Plc.
5.	Guinness Nigeria Plc.
6.	Honeywell flour mill Plc.
7.	International breweriesPlc.
8.	Mcnichols Plc.
9.	Nascon allied industries Pplc.
10.	Nestle Nigeria Plc.
11.	Nigerian breweries plc.
12.	Nigerian enamelware plc.
13.	Northern Nigeria flour mills plc.
14.	P Z cussons Nigeria plc.
15.	Unilever Nigeria plc.
16.	Union dicon salt plc.
17.	Vitafoam Nigeria plc.