**THE INTERPLAY BETWEEN CORPORATE GOVERNANCE AND WORKING CAPITAL MANAGEMENT IN THE SELECTED MANUFACTURUNG FIRMS IN NIGERIA, 2015-2023**

**Abstract**

*This study examined the effect of corporate governance on working capital management of the selected consumer goods companies in Nigeria, spanning 2015 to 2023. The study specified that working capital management (cash conversion cycle) is a function of corporate governance (board size, board composition, board remuneration and corporate social responsibility). Using cross sectional data extracted from 10 consumer goods companies and estimated using fixed panel regression, the study revealed a heterogeneous effect of corporate governance variables on working capital management. The study recommends effective working capital management through best corporate governance practice.*

***Keywords:* Corporate governance, working capital management, solvency, board of director**

**1.0 Introduction**

Working capital management is one of the key managerial functions of the financial manager, concerned with ensuring that the company remains liquid at all times to meet its operational needs and short-term financial obligations to creditors, suppliers, and others with financial claims on the firm. It involves managing the firm's current assets (circulating assets) and liabilities and represents the amount invested in current assets expected to be realized within the fiscal year, and the amount of financial obligations owed by the company to its creditors (Akinsulire, 2011; Ayodeji, 2011).

Working capital management is crucial for companies, as it allows firm to accurately predict their future financial needs, enabling them to plan ahead for potential cash shortages and meet future obligations. Additionally, it assists the company in anticipating the availability of idle funds, enabling them to invest in short-term financial assets that can provide a steady income stream. This is why Ammarah and Nisar (2015) submitted that working capital must be well-managed, as mismanaged working capital evidence management inefficiency.

It is essential for the financial manager to ensure that the value of the company's current assets is always higher than its current liabilities, as argued by Akinsulire (2011), so that it can meet its short-term needs. When current assets exceed current liabilities, the company would not be under pressure to meet its financial obligations. Conversely, an excess of current liabilities over current assets may put the company under pressure, potentially leading to illiquidity, as it may struggle to meet its financial obligations as they fall due. This is why a financial manager must ensure that the company's short-term financial resources are well-managed.

There is often a conflict between profitability and solvency in working capital management. This is because maintaining high levels of current assets may result in low profitability, but the company remains solvent; conversely, maintaining low current assets and investing in other profit-generating assets may raise solvency concerns (Ayodeji, 2011; Naz *et al.,* 2021; Hung & Dinh, 2022; Nobanee & Al Hajjar, 2009). Therefore, a balance must be strike between profitability and liquidity to enhance the health of the companies.

One way to ensure firms maintain optimal working capital levels is through corporate governance as it provides a structure and process for managing and controlling business behaviour to maximize both short-term and long-term strategic goals of company (Gill & Bigger, 2010; John & Senbet, 1998). Furthermore, corporate governance comes with rules, guidance, and principles by which a company is run and it determined how efficiently and effectively the company has been using and managing its financial and non-financial resources. A company with a well-established corporate governance is viewed positively, as it ensures stakeholder confidence, improves public image, enhances transparency and disclosure, promotes company integrity, and ensures effective management of company financial resources (Clarke, 2007; Ikotun, 2014; Wambua, 2011).

Empirically, research has demonstrated that corporate governance practices play a crucial role in effectively managing a company's working capital. Mohammed *et al.,* (2024) argued that boards and CEOs are responsible for framing guidelines for working capital balance levels. The size and composition of the board of directors, the number of board meetings, the size and composition of the risk management committee, employees’ engagement and motivation and the relationship between board and its stakeholders may result in high cash balances, increased receivables and payables, and low inventory days, leading to a quicker cash conversion cycle. Njoku (2017) also contend that corporate governance helps expand the working capital of a firm especially from the board size and audit committee perspective.

Empirical evidences on several ways in which corporate governance impacts working capital management has been discussed, including risk management, financial transparency, asset stewardship, and board oversight (Mohammed *et al.,* 2024). Corporate governance emphasizes risk management, which is essential for effective working capital management, as it eliminates liquidity risk, credit risk, and operational risk. Financial transparency, promoted by corporate governance, provides accurate information about a company's current assets and liabilities, enabling stakeholders to make informed decisions. Corporate governance also promotes accurate asset stewardship, and working capital management plays a crucial role in fulfilling this responsibility. Finally, the board, through management, oversees working capital management, ensuring regular practice and monitoring of effective working capital management methods (Code of Corporate Governance, 2008;Institute of Chartered Secretary and Administrator in Nigeria Material, 2022:; OECD 2016).

The theoretical framework explaining the relationship between corporate governance and working capital management is agency theory, as posited by Jensen and Meckling (1976). This well-established theory has been applied across various fields to illustrate the conflict of interest that often arises between company owners (principals) and company managers (agents) regarding the use of corporate resources for the company’s growth. Managers typically have different interests than shareholders. For instance, managers may prioritise high salaries, bonuses, and personal perks. In contrast, shareholders are focused on achieving strong returns, consistent dividend payments, and investment opportunities that could enhance the firm’s market value. These differing interests can lead to mismanagement, inefficiencies, and self-serving behaviours from managers. As a result, shareholders often incur significant costs to monitor management's actions to ensure that their interests are represented. These costs, known as agency costs, can include monitoring expenses, bonding costs, and residual losses.

One of the monitoring costs incurred by shareholders is the payment to the board of directors, who act as a governing body to help reconcile the interests of shareholders and managers. In the context of corporate governance and working capital management, this theory emphasizes the importance of compliance with risk management codes, especially regarding liquidity risk. Effective management of working capital is essential to maintain solvency and ensure that the company can meet its financial obligations in a timely manner. This theory is supported by research conducted by Vargas-Hernández and Teodoro Cruz (2018), McColgan (2001), and Zogning (2022).

Effective working capital management is crucial for businesses; however, this research has found that many companies carry a higher level of current liabilities than current assets. Moreover, in most cases, accounts payable significantly exceed accounts receivable, often by a factor of more than two. Additionally, there is a notable discrepancy between the average number of days it takes companies to pay their suppliers (accounts payable days) and the time taken to collect payments from customers (accounts receivable days). While these imbalances may offer short-term advantages, since companies receive payments from customers before settling their obligations to suppliers, it can ultimately strain relationships with suppliers and creditors.

Empirically, the study observed dearth of studies on the relationship between corporate governance and working capital management, as many studies empirically treated the reverse causality. Few studies, including those by Coleman *et al.,* (2020), Kumar and Jindal (2019), Mohammed *et al.,* (2024), and Tahir *et al.,* (2019), primarily from other developing countries, have explored this relationship. However, in Nigeria, most studies reviewed focused on the relationship between working capital management and profitability or performance. Few among these studies include Assey *et al.,* (2020), Braimah et al. (2021), Okerekeoti (2021), Khajar and Udin (2020), Nguyen, *et al.,* (2020), Oko, *et al.,* (2020), Olayemi (2020), Olaniyi and Nzewi (2019), Otekunrin *et al.,* (2021), Yakubu *et al.,* (2020). As a result, this study plays a crucial role in bridging the identified gaps in the empirical literature from Nigeria. Thus, examines the effect of corporate governance on working capital management in Nigeria, with a particular emphasis on consumer goods companies, from 2015 to 2023.

**2.0 Literature Review**

**2.1 Corporate Governance**

Gill and Biger (2010) defined corporate governance as “the structure and processes that are used to manage and control business behaviour with the goal of maximising shareholder value.” According to Shleifer and Vishny (1997), corporate governance ensures that investors receive a return on their investment in a business. Corporate governance is primarily responsible for establishing working capital management policies; as a result, its critical role in working capital management cannot be overstated.

Cornelius (2010) defined corporate governance as “the stewardship role of corporate directors in providing oversight and nurturing the implementation of a company's strategies and goals.” Thus, corporate governance is the system of rules, practices, and processes established to ensure the efficient operation of a business by managers and shareholders and to guide their behaviour. These rules apply to the characteristics of individual companies and the factors that enable firms to adhere to excellent governance practices.

Prasad (2006) defined corporate governance as “the relationship between the various stakeholders in a business that defines both the performance and direction of the business.” Clarke (2007) cited the Cadbury Committee's definition of corporate governance as the system that controls and directs businesses. On the other hand, the World Bank views corporate governance as a means of maximising a company's value through compliance with its legal, contractual, and financial obligations (Saad, 2010).

Therefore effective corporate governance is a function of compliance with the corporate governance codes, which is the main responsibility of the board of directors. This is due to the board of directors' overall responsibilities, which include approving and supervising the implementation of strategic objectives, risk strategies, and corporate values, and performing oversight functions on board committees such as nomination and remuneration, audit, and risk management. This implies that weak corporate governance can have an adverse effect on the company's corporate objectives. Not only that, it can bring about integrity issues, a poor public image, a lack of transparency and accountability, and confidence and trust issues in the financial statement, among other things. This was supported by Coleman *et al.,* (2020) as they submitted that boards of directors have a great influence on how companies handle their working capital when they have strict working capital policies than when they have more flexible policies.

**2.1.1 Working Capital Management**

The term working capital is the portion of the company’s capital used in financing the day-to-day operation of an organization. It is the difference between current assets and current liabilities. Rationally, it is expected that current assets should be able to finance the companies’ current liabilities twice; with this, the company would be liquid enough to meet its short-term financial obligations. This was supported by Akinsilure (2011), who stated that working capital is the excess of current assets over current liabilities, which is also the same as net current assets. He further explained that working capital represents the amount invested in assets that are expected to be realized during the year's trading. This implies that the assets are not permanent, as it changes throughout the year and turned over several times; hence, they are used to finance the purchase of stocks and production, as well as debtors and suppliers.

Several studies have conceptualised working capital management; few of them are discussed. According to Muhammad *et al.,* (2015), working capital management “entails utilizing funds required for daily organisational operations to accomplish an organization's goals.” This definition is suggestive, as it explains that working capital management is about the effective use of company capital for day-to-day operations to achieve corporate objectives. While this definition specifies the rational use of capital, it does not include its components.

Kehinde (2011) posits that working capital management is concerned with the management of cash, cash equivalents, debtors, prepayments, stocks, creditors, accruals, and short-term loans to maximize profitability and ensure the smooth operation of an organization. This definition by Kehinde mentioned the components of working capital and explained that effective management of them could bring about the smooth running of the company's day-to-day activities.

Existing authors have used several metrics to measure working capital management. While some have used the current ratio, cash ratio, and quick ratio, some also used the cash conversion cycle (Nguyen *et al.,* 2020). This study employs the cash conversion cycle to elucidate the efficient management of companies' working capital. So, CCC is the time between when a company pays its creditors in cash for buying raw materials that are then turned into products and when it gets paid in cash by debtors for goods that were sold on credit to customers (Nguyen *et al.,* 2020). It can further be defined as the difference between the operating cycle and the cash cycle in an organization. While the operating cycle explains the length of time it takes to acquire stock of raw materials, convert them to finished products, sell them, and collect cash from sales, the cash cycle explains the number of days that it takes before cash is collected from sales measured from when the company pays for the inventory (Akinsulire, 2011). Hence, both tell much about the financial implications of working capital management policies and the time interval that companies meet their financial obligations.

According Ayodeji (2011) working capital is otherwise referred to as circulating capital. He explained that “these are current assets that revolve within the operating cycle, i.e., the working capital cycle, of the firm. They are stock of raw materials, stock of semi-finished goods, which are called work in progress, stock of finished goods, debtors, and cash” he further explained that “ the process of circulation of the circulating assets within the operating cycle of a firm is the conversion of cash to stock of raw materials, raw materials into stock of semi-finished goods, semi-finished goods into stock of finished goods, and finished goods into debtors back into cash, and the process starts all over again repeatedly for a manufacturing concern. But for a trading firm, it is the conversion of cash into finished goods into debtors and debtors into cash, and the process starts all over again and again. Figure 1 depicts the synchronization of this process over and over again

Cash

**Debtors pay cash**

**Stock used to**

**Produce semi-finished goods**

**Raw**

**Materials**

**Finished**

 **goods**

**bought**

 **for cash**

**Finished**

 **goods**

**bought**

 **for cash**

**Debtors**

**Semi finished goods**

**Stock turned**

**Into finished**

 **goods**

**Finished goods**

**Finished goods**

**Sold on credit**

**Fig:1 *Cash Operating Cycle***

In order to calculate the cash conversion cycle of a firm, the general formula often used is stated as: Cash Conversion Cycle = Inventory turnover in days + Account receivables turnover in days – Account payables turnover in days

The conversion cycle formula measures the amount of time, in days, it takes a company to turn its resource inputs into cash, and this is calculated using three components, such as inventory turnover in days, account receivables turnover in days, and account payables turnover in days.

Inventory turnover in days (IVTD) explains **t**he average number of days that it takes a company to sell its inventories. It also shows how quickly a company can turn over its inventory into cash in a year. This is a liquidity metric that tells about how popular the company's products are, and it is also an indicator of a company’s operational and financial efficiency. The lower the inventory turnover in days, the better for the companies, as this would increase the companies’ turnaround. This is calculated as the average inventory divided by the cost of sales multiplied by 365.

Accounts receivable turnover in days explains the number of times the company has to wait until it receives the proceeds of the credit sales from debtors. This metric tells us much about whether a company's waiting period is too elongated, moderate, or short and if the companies’ debtors are meeting up with the credit period given. The shorter the receivable turnover days, the better for the company, as it evidences that the company is efficient in managing its customers to prompt them to pay as at when due. Also, it evidences that the company has a high proportion of customers who pay their debts quickly. This is calculated as accounts receivable divided by credit sales multiplied by 365.

The accounts payable turnover in days, however,refers to the average number of days it takes a company to pay back its accounts payables. The company can leverage this metric by postponing payment, allowing for the reinvested funds before payment. However, it must be used with caution, as excessive delay of suppliers or creditor money can spoil their relationship and, as such, affect future suppliers and credit from banks. Therefore, payables turnover in days explains how well a company is managing its accounts payable. The formula is given as average account payables divided by credit purchases multiplied by 365.

The cash conversion cycle (CCC) of a firm indicates how long it takes for the company to convert its resources into cash. A longer cash conversion cycle means that the company will have to wait longer to turn its assets into cash. Conversely, a shorter cash conversion cycle allows the company to convert its resources to cash more quickly. Additionally, this waiting time is also an important indicator of how solvent or liquid a firm is in meeting its financial obligations. A company with a long cash conversion cycle may need to seek alternative financing options for its day-to-day operations, as its working capital is tied up in inventory and receivables. On the other hand, a company with a short cash conversion cycle is better positioned to meet its daily financial needs. While a company with a negative cash conversion cycle is generally more liquid; however, it may encounter challenges in maintaining positive relationships with suppliers and creditors if these relationships are not well managed.

**2.2 Theoretical Framework**

The study employs agency theory as its theoretical framework to examine the relationship between corporate governance and working capital management. Agency theory is commonly used to explain the conflicts of interest between principals (shareholders) and agents (management). Principals aim to maximize their financial returns and ensure the efficient use of financial resources, whereas agents may prioritise their own interests over those of shareholders, leading to decisions that compromise shareholder value. To mitigate this issue, principals incur agency costs, which encompass the expenses associated with monitoring agents' activities to protect their interests. These costs include external auditor fees, monitoring expenses, bonding costs, residual loss, risk aversion costs, and information asymmetry costs resulting from managers withholding relevant information from shareholders.

Effective working capital management can enhance a firm's liquidity position, and corporate governance practices can play a crucial role in resolving the principal-agent conflict. The board of directors' oversight function ensures managers adhere to corporate governance codes and address deviations. This is also what Yusoff and Alhaji (2012) think. They view corporate governance as a means for the board of directors and top management to monitor and prevent issues in the principal-agent relationship. In this context, top administrators are agents, owners are principals, and the board of directors is the monitoring apparatus (Haslindar, 2011). Directors oversee the board's governance responsibilities, providing services to shareholders by monitoring management's decision-making processes and actions.

Johanson and Ostergren (2010) note that agency theory offers valuable insights into corporate governance, but its applicability is limited to countries with Anglo-Saxon governance systems. Consequently, firms in different countries may employ distinct methods to address the agency problem.

**2.3 Empirical Review**

Kantudu *et al.,* (2016) studied the relationship between corporate governance and working capital management of listed conglomerates in Nigeria, covering the period from 2004 to 2013. The cash conversion cycle was used as the measure of working capital management, while board size, board composition, and audit committee size were used as measures of corporate governance. The model was controlled by firm size and age. Cross-sectional data were extracted from the annual financial reports of the companies and estimated using correlation and regression methods. The study found that board size and board composition had a significant and positive impact on the cash conversion cycle, while audit committee size had a negative and insignificant impact.

Njoku (2017), in her doctoral thesis, examined the impact of corporate governance on working capital management among Nigerian companies. The study aimed to determine whether corporate governance can help expand the working capital of the selected companies. Board size, CEO duality, audit committee, and CEO tenure were used as measures for corporate governance, while working capital management was measured by the cash conversion cycle. Cross-sectional data were sourced from 89 companies and estimated using multiple regression. The study revealed that board size and audit committees help expand working capital management in these organizations.

Njoroge (2017), in her master's dissertation, "Impact of Corporate Governance on Working Capital Management," proxied corporate governance using board size, independence of the board, and audit committee size, while working capital management was proxied by days' sales outstanding, days' payable outstanding, and inventory holding period. The model was controlled by sales growth and firm size. The study sourced cross-sectional data from 65 listed companies in Nairobi and estimated using linear regression. The study revealed that corporate governance has a negative effect on days' sales outstanding, while board size has a positive relationship with inventory holding period. Additionally, corporate governance, such as independence of the board and audit committee size, had a positive effect on days' payables outstanding.

In the study of Tahir, *et al.,* (2019), they looked at how corporate governance, working capital management, and firm risk were connected in Pakistan from 2011 to 2017. They used board meetings, board independence, CEO duality, board ownership, board size, audit independence, and the presence of a CFO to represent corporate governance. The cash conversion cycle was used to represent working capital, and the Z-score was used to represent financial risk. The model was controlled by variables like financial leverage, firm size, and financial growth. Cross-sectional data from 60 firms were used to estimate the study. The results showed that corporate governance has a negative effect on working capital management, but a positive but not very significant effect on financial risk.

The research by Olaniyi and Nzewi (2019) looked at the connection between managing working capital and the financial performance of Nigerian companies that make materials from 2001 to 2015. It used an ex-post factor research design and cross-sectional data from the annual financial statements of the companies that were studied. An ordinary least squares regression model was used to estimate the data. The study found that debtors and creditors of inventory have no meaningful relationship with the return on investment of the Nigerian companies that were studied.

Heider *et al.,* (2019) in their study” impact of corporate governance on working capital management efficiency in Pakistan between 2010 and 2015)” used board size, board composition and board meeting to measure corporate governance while account receivables, account payables and inventory turnover days measure working capital management. They extracted data from 47 manufacturing companies and they estimated using regression. The study revealed no significant effect of corporate governance on all the working capital management variables of the selected companies.

Kumar and Jindal (2019) investigated the impact of corporate governance on the profitability and working capital management of the Indian manufacturing sector between 2011 and 2017. The study proxied corporate governance by CEO duality, board meetings, audit committee members, and directors' remuneration; profitability was proxied by profit after tax while working capital was measured using the current ratio. The Prowess database was used for the collection of data from 56 companies, and it was estimated using a correlation matrix and OLS model. The study found that corporate governance components affect the profitability of firms by more than 86%. It also found that corporate governance components were significantly associated with the working capital management of the selected companies.

Nguyen *et al.,* (2020) looked into how working capital management affects a company's profitability. They measured the cash conversion cycle by accounts receivable turnover in days (ARD), inventory turnover in days (INVD), and accounts payable turnover in days (APD), while profitability was measured by return on assets and Tobin's Q. The study used cross-sectional data from the annual financial statements of the companies they chose and estimated it using panel regression. The results showed that working capital management had negative and significant effects on the firm's ability to make money.

Khajar and Udin (2020) looked into the connection between working capital, firm size, and firm profitability. Return on asset was used to measure profitability, and the cash conversion cycle (CCC) was used to measure working capital efficiency. Total sales were used to measure firm size. The study estimated data from the annual statements of the chosen companies using a panel multiple regression analysis. The results showed that the higher the level of firm profitability, the more efficient the working capital, and the larger the firm, the higher the level of firm profitability.

Assey *et al.,* (2020) focused on examining how management of working capital affects the financial performance of non-financial companies listed at the Dar-Es-Salaam Stock Exchange. The study measured financial performance by return on equity and market ratio, while working capital management was measured by liquidity ratio (current ratio), debtor collection period, and inventory turnover ratio. The study collected cross-sectional data from the selected companies and analysed it using panel regression. The study revealed a significant negative relationship between the debtor collection period and financial performance. On the other hand, the creditor payment period, inventory days, and liquidity ratio have a positive effect on performance.

Oko *et al.,* (2020) examined working capital management policies and the performance of the selected manufacturing firms. The independent variable was measured by Aggressive Investment Policy (AIP) and Aggressive Financing Policy (AFP), while the dependent variable was measured by return on assets (ROA), return on equity (ROE), and Tobin-Q. The data were analysed using descriptive analysis and multiple regression analysis. The study found a significant effect of aggressive investment policy on firms’ performance (ROA, ROE, and Tobin-Q). Also, the study established a significant but negative effect of aggressive financial policy on an organization’s performance measures.

Yakubu *et al.,* (2020) examined the impact of working capital management on the financial performance of selected firms in Nigeria. The study used multiple regressions as a tool for analysis. The proxies for working capital management were the cash conversion period, debt-equity ratio, and inventory conversion period, while the proxy for financial performance was Return on Equity (ROE). The study reveals that the Cash Conversion Cycle showed a positive significant impact on the financial performance of selected quoted firms in Nigeria, while the Debt Equity Ratio and Inventory Conversion Period have no significant impact on the financial performance of selected quoted firms in Nigeria.

Coleman *et al.,* (2020) investigated the correlation between aggressive and conservative working capital policies and corporate governance in Nigeria and Ghana from 2012 to 2016. The independent variable was corporate governance, which was represented by the number of independent directors on the board, the audit committee, the dual role of the CEO, and the reputation of the audit committee. The dependent variable was working capital, which was represented by accounts receivable and payable, inventory management, and the cash conversion cycle. The model was controlled by the size, age, financial leverage, and growth of the firm. The study sourced panel data from 103 firms in the stock exchanges of the respective countries and analysed it using Pearson correlation panel regression. The study found that boards of directors have a bigger effect on how companies handle their working capital when they have strict working capital policies than when they have more flexible policies.

Olayemi (2020) examined the effect of working capital management on small and medium-scale enterprises' performance in Akure, Nigeria. The study used a survey research design and got first-hand information from 284 small and medium-sized businesses through a structured questionnaire which was analysed in two ways: descriptively and inferentially. The study revealed that working capital has a significant and positive relationship with SMEs' performance, with bank loans, loans from family and friends, and personal savings being the most common sources of working capital funding. Further findings revealed that cash was the most widely used working capital component in the study, and inadequate cash management proved to be the most alarming of all the working capital management challenges in the study area.

Ojeka *et al.,* (2021) studied the effect of audit committee characteristics on non-performing loans at deposit money banks in Nigeria. The researchers used an ex post facto research design, sourcing secondary data from 15 deposit money banks and estimating it through panel regression. The study revealed a negative correlation between audit committee meetings and non-performing loans.

Okerekeoti (2021) focused on the interrelationship between working capital management and the financial performance of food and beverage companies listed on the Nigeria stock exchange. The study modelled financial performance, proxied by return on assets as a function of working capital management, proxied by inventory. He extracted and estimated cross-sectional data from the annual statements of 12 food and beverage companies using pooled regression. The study found that inventory has an insignificant negative effect on companies' returns on assets.

Otekunrin *et al.,* (2021) examined the impact of working capital management on the profitability of selected quoted agricultural and agro-allied companies in Nigeria from 2012 to 2016. The study modelled profitability, proxied by profit after tax and interest, as a function of working capital management: trade receivables collection period, trade payables payment period, inventory turnover period, and cash conversion cycle. Cross-sectional data extracted from 18 agro-allied companies' annual reports were estimated using regression. The study revealed a positive relationship between working capital management and profitability among the selected Nigerian agriculture and agro-allied sectors.

Braimah *et al.,* (2021) conducted an investigation into the correlation between working capital management and the profitability of SMEs in Ghana from 2007 to 2016. Trade receivable, trade payable, inventory conversion period, and cash conversion cycle served as proxies for working capital management, while gross operating profit, net operating profit, and return on assets proxied profitability. Firm size, firm growth, current ratio, firm age, and leverage were the controlling factors in the model. Data sourced from 366 SMEs were analysed using the generalized method of moments. The study revealed a link between the trade payable period and profitability. The inventory conversion period and the cash conversion cycle negatively correlate with profitability, while the study revealed an inverted U-shaped relationship between the trade receivables collection period and firm profitability, suggesting the existence of an optimal trade receivables collection period that enhances profitability.

Naz *et al.,* (2021) examined the mediating role of working capital management in the relationship between corporate governance and the performance of listed companies in Pakistan from 2009 to 2018. Return on assets and return on equity were used to measure performance, and cash conversion cycle, current ratio, and cash conversion efficiency were used to measure working capital management or efficiency. Sales growth, leverage, and firm size also controlled the model. Cross-sectional data were retrieved from the annual financial statements of the 179 companies, and data extracted were estimated using regression analysis. The study revealed that working capital management impacted performance positively. It further revealed that there is a partial role of working capital management in moderating the relationship between corporate governance and performance.

**3.0 Methodology**

A quantitative research design was employed as the study is based on numerical data between corporate governance and working capital management between 2015 and 2023. The data was extracted from the annual financial statement of ten (10) consumer goods companies in Nigeria. In this study, corporate governance was measured using the board size, board composition (number of non-executive director to total board size), board remuneration and corporate social responsibility, while working capital management variable was measured by cash conversion cycle.

**3.1 Model Specification**

This study adapted Kumar and Jindal (2019) model which states that:

$$PAT=f (CDUALITY, BCOM, BSIZE, NED, BM, ACM, DR, SIZE)$$

The model explained that profit after tax is function CEO duality, board committee, board size, non-executive, board meetings, audit committee members, director remuneration and average sales. However, this model was modified by limiting the variables of corporate governance to four, that is, board of director size (BOZ), board composition (ratio of non- executive directors to the board size), board remuneration and corporate social responsibility, while the working capital management replaced profit after tax. Therefore, the new model for this study is stated thus;

$$CCC=f \left(BOZ, BCOM, BRM, CSR\right)----------------1$$

In an explicit form, the model is re-stated thus;

$$CCC\_{it}=δ\_{0}+δ\_{1}BOZ\_{it}+δ\_{2}BCOM\_{it}+δ\_{3}BDR\_{it}+δ\_{4}CSR\_{it}+ε\_{it}-------2$$

Where, $δ\_{0}$ =Constant Term, CCC=Cash Conversion Cycle, BOZ=Total Number of Director (Size), BCOM = ratio of Non-Executive Director to board size, BDR=Board Remuneration, CSR= Corporate social responsibility, $ε$= stochastic error terms, $δ1----δ4$=Parameters to be estimated

***3.2 Apriori expectation***

In line with the theoretical expectation of this study, it is expected that corporate governance would bring about effective working capital management. Hence, corporate governance variables is expected to have values greater than 0. This is expressed in a mathematical form as CGV>0

**3.3 Sources of Data collection**

Cross sectional data will be sourced from the selected consumer goods manufacturing companies’ financial statement which covered a temporary period between 2015 and 2023

**3.4 Estimation Techniques**

The study employed, descriptive statistics, correlation matrix and panel regression as the estimation techniques

**4.0 Analysis and Interpretation**

**4.1 Descriptive Statistics**

Table 1 presents the central tendencies of key variables. The Cash Conversion Cycle (CCC) averaged 65.16 days, indicating that, on average, companies take 65 days to convert resources into cash. This suggests potential inefficiencies in working capital management, as evidenced by a maximum CCC of 247 days for some companies. Board size averaged 11 members, falling within a moderate range generally considered beneficial for company performance. Board composition (BCM), reflecting the proportion of non-executive directors, averaged 0.7046, suggesting a relatively high level non-executive directors and independent non-executive directors representation. However, the range of BCM values, from 0.4760 to 0.9286, indicates significant variation in board diversity across companies. Board remuneration exhibited a wide range, with an average of 430,196 (in thousands) and a maximum exceeding 1 million, suggesting significant disparities in director pay. Finally, corporate social responsibility (CSR) expenditure displayed a vast range, from a minimum of 2,088 (in thousands) to a maximum of 1,160,000,000 (in thousands), highlighting a wide spectrum of CSR engagement levels among the companies studied. These results give us a first look at the main trends of the variables and point out areas to concentrate in order to learn more about how they affect company performance.

**Table .1: Summary of Descriptive Statistics (Measure of Central Tendency)**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|   | Mean | Median | Max | Min |
| CCC | 65.1683 | 51.4491 | 247.8447 | 0.2589 |
| BOZ | 11.0000 | 10.0000 | 17.0000 | 6.0000 |
| NEXD | 0.7048 | 0.7000 | 0.928600 | 0.4706 |
| BDR | 430196.1 | 259193.0 | 1635543. | 41532.00 |
| CSR | 90899518 | 4436420. | 1.16E+09 | 2088.000 |

Note: CCC= Cash conversion cycle, BOZ=Board size, BCOM=Board composition, BDR=Board remuneration, CSR=Corporate social responsibility

**Source: Authors Computation using EViews 10, 2024**

Table 2 presents the descriptive statistics of the variables, focusing on the dispersion or spread of the variables from the average mean. It was revealed that the variables are positively and rightly skewed due to the fact that the average mean of variables are higher than the median values. It was further found that CSR demonstrated the highest volatility, followed by BDR, while BCOM exhibited the lowest. Kurtosis values exceeded 3 for CCC, BDR, and CSR, suggesting a leptokurtic distribution, while BOZ and BCOM had kurtosis values closer to 3, indicating a distribution closer to mesokurtic. The Jarque-Bera test indicated that BOZ and BCOM were normally distributed, while CCC, BDR, and CSR were not. The analysis was based on 90 observations for each variable.

**Table .2: Summary of Descriptive Statistics (Measure of Dispersion)**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|   |  Std. Dev. |  Skewness |  Kurtosis |  Jarque-Bera | Prob |  Obs |
| CCC |  51.6287 |  1.1095 |  4.0601 |  18.1425 |  0.0001 | 90 |
| BOZ |  2.8433 |  0.4406 |  2.0424 |  5.0802 |  0.0789 | 90 |
| NEXD |  0.1187 |  0.0350 |  2.3858 |  1.1466 |  0.5637 | 90 |
| BDR |  401952.9 |  1.2071 |  3.7629 |  19.2322 |  0.0001 | 90 |
| CSR |  2.0700 |  3.4492 |  15.8655 |  586.0539 |  0.0000 | 84 |

Note: CCC= Cash conversion cycle, BOZ=Board size, BCOM=Board composition, BDR=Board remuneration, CSR=Corporate social responsibility

**Source: Authors Computation using EViews 10, 2024**

Table 3 presents the results of the correlation analysis between corporate governance and working capital management variables. The findings indicate weak correlations between the variables. Specifically, LBOZ (0.2429), LBDR (0.2687), and LCSR (0.0934) exhibit weak but positive associations with the cash conversion cycle, suggesting that improvements in these aspects of corporate governance may lead to more efficient working capital management. Conversely, BCOM (-0.1142) shows a weak negative association, implying that a less diverse board composition (in terms of non-executive and independent directors) may be associated with less effective working capital management.

Furthermore, a check for multicollinearity among the independent variables revealed that all values are below 50%, indicating the absence of significant multicollinearity issues.

**Table 3: Summary of Correlation Matrix**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|   | LCCC | LBOZ | BCOM | LBDR | LCSR |
| LCCC | 1 |  |  |  |  |
| LBOZ | 0.2429 | 1 |  |  |  |
| BCOM | -0.1142 | 0.1014 | 1 |  |  |
| LBDR | 0.2687 | -0.0514 | -0.4240 | 1 |  |
| LCSR | 0.0934 | 0.1035 | -0.0250 | 0.0466 | 1 |

Note: CCC= Cash conversion cycle, BOZ=Board size, BCOM=Board composition, BDR=Board remuneration, CSR=Corporate social responsibility

**Source: Authors Computation using EViews 10, 2024**

Table 4 presents the results of cross-dependence tests to determine whether the data from different companies are independent. Three methods were employed: Breusch-Pagan LM test, Pesaran Scaled LM test, and Pesaran CD test. The decision rule for this test is that at least one of the tests must have a p-value greater than 5% to conclude independence.

The results show that the p-values for all three tests (0.0559, 0.0870, and 0.6651) are above the 5% significance level. This indicates that the cross-sectional data collected for the variables are independent of each other. As a result, panel regression would be employed as the estimation technique for this study.

**Table 4: Cross-Dependence Test**

|  |  |  |  |
| --- | --- | --- | --- |
| Test | Statistic   | d.f.   | Prob.   |
| Breusch-Pagan LM | 40.80643 | 28 | 0.0559 |
| Pesaran scaled LM | 1.711331 |  | 0.0870 |
| Pesaran CD | -0.432833 |   | 0.6651 |

**Source: Authors Computation using EViews 10, 2024**

The effect of corporate governance on the working capital management of the selected manufacturing companies is analysed using fixed panel regression, as presented in Table.4. It revealed that the lag value of LCCC (0.1080) has a positive but insignificant (p-value 0.3036) effect on its previous value. This suggests that, holding other variables constant, a 1% increase in the lagged LCCC would lead to a 10.80% increase in its previous value. While LBOZ (0.4524) and LBCOM (1.0748) have positive but insignificant effects on the cash conversion cycle, LBDR (0.0427) and LCSR (0.0052) have negative but insignificant effects on the cash conversion cycle. The insignificance of all corporate governance variables suggests they do not significantly impact cash conversion cycle in the selected companies. The implication of this is that, all things being equal, a 1% increase in LBOZ and LBCOM would bring about a 45.24% and 107.48% increase in LCCC, respectively, while a 1% increase in LBDR and LCSR would bring about 4.27% and 0.5% reduction in cash conversion cycle respectively

Furthermore, the model exhibits a good fit, with an R-squared of 0.6578 and an adjusted R-squared of 0.5685, indicating that the model explains a considerable portion of the variation in the cash conversion cycle. The F-statistic (7.3700) and its corresponding p-value (0.0000) is highly significant, confirming the overall significance of the model. The Durbin-Watson statistic (2.0982) suggests no significant autocorrelation in the residuals. Based on these findings, the fixed panel regression model provides some evidence of a relationship between corporate governance and working capital management in the selected manufacturing firms in Nigeria, but the effects of the individual corporate governance variables are not statistically significant.

**Table 5: Summary of Fixed Panel regression**

**Dependent Variable: LCCC**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Variable | Coefficient | Std. Error | t-Statistic | Prob. |
| LCCC(-1) | 0.1080 | 0.1254 | 0.8613 | 0.3936 |
| LBOZ | 0.4524 | 0.7357 | 0.6149 | 0.5417 |
| BCOM | 1.0748 | 1.2546 | 0.8567 | 0.3961 |
| LBDR | -0.0427 | 0.1740 | -0.2457 | 0.8070 |
| LCSR | -0.0052 | 0.0482 | -0.1070 | 0.9152 |
| C | 2.1161 | 3.1687 | 0.6678 | 0.5076 |
| R2=0.6578 | Adj-R2=0.5685 | F-Stat=7.3700 | Prob=0.0000 | D.W=2.0982 |

**Source: Authors Computation using EViews 10, 2024**

Table 6 presents the results of the random effects panel regression analysis between corporate governance and working capital management. The lag value of LCCC (0.2552) exhibits a positive and statistically significant effect on its previous value (p-value = 0.0401). This indicates that holding other variables constant, a 1% increase in the lagged LCCC would lead to a 25.52% increase in its previous value.

Regarding corporate governance variables, LBOZ (0.8877), BCOM (0.8055), LBDR (0.3232), and LCSR (0.0016) all have positive effects on the cash conversion cycle. However, only LBDR (p-value = 0.0202) is statistically significant at the 5% level. This implies that a 1% increase in LBDR would lead to a 32.32% increase in the cash conversion cycle, while the effects of LBOZ, BCOM, and LCSR are not statistically significant. This therefore implies that a 1% unit increase in LBOZ, BCOM, LBDR, and LCSR would bring about 88.77%, 80.55%, 32.32%, and 0.16% increases in LCCC, respectively.

The model exhibits an R-squared of 0.2312, indicating that 23.12% of the variation in the cash conversion cycle is explained by the included variables, while the difference of 76.88% is explained by other variables not included in the model. The adjusted R-squared (0.1587) suggests that the model's explanatory power is limited. The F-statistic (3.1885) with a p-value of 0.0137 indicates that the overall model is statistically significant. The Durbin-Watson statistic (2.0462) suggests no significant autocorrelation in the residual.

Based on these findings, the random effect panel regression model provides some evidence of a relationship between corporate governance and working capital management in the selected manufacturing firms in Nigeria. However, only board diversity (LBDR) has a statistically significant positive impact on the cash conversion cycle.

**Table 6: Summary of Random Effect Panel regression**

**Dependent Variable: LCCC**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Variable | Coefficient | Std. Error | t-Statistic | Prob. |
| LCCC(-1) | 0.2552 | 0.1213 | 2.1046 | 0.0401 |
| LBOZ | 0.8877 | 0.5714 | 1.5535 | 0.1263 |
| BCOM | 0.8055 | 1.2548 | 0.6419 | 0.5237 |
| LBDR | 0.3232 | 0.1350 | 2.3938 | 0.0202 |
| LCSR | 0.0016 | 0.0331 | 0.0494 | 0.9608 |
| C | -3.9522 | 2.5230 | -1.5665 | 0.1232 |
| R2=0.2312 | Adj-R2=0.1587 | F-Stat=3.1885 | Prob=0.0137 | D.W=2.0462 |

**Source: Authors Computation using EViews 10, 2024**

TheHausman test result is shown in Table 7 to help decide which of the two options for estimating the variables between the fixed effects panel regression or random effects panel regression. It was found that the p-value of the test is 0.0418, which is lower than the 5% level of significance. Therefore, the null hypothesis, which says a random effect is appropriate, is rejected, while the alternate hypothesis, which says that a fixed effect is appropriate, is accepted as the estimation technique for this study. Hence, the study model is estimated and interpreted using fixed effect panel regression.

**Table 7: Summary of Hausman Endogeneity est**

|  |  |  |  |
| --- | --- | --- | --- |
| Test Summary | Chi-Sq. Statistic | Chi-Sq. d.f. | Prob.  |
| Cross-section random | 11.5339 | 5 | 0.0418 |

**Source: Authors Computation using EViews 10, 2024**

**4.2 Summary and Discussion of Findings**

The estimated results of the effects of corporate governance on working capital management of the selected 10 consumer goods companies in Nigeria between 2015 and 2023 showed that board size and board composition (specifically the presence of non-executive and independent directors) had positive, albeit statistically insignificant, effects on working capital management. Conversely, board remuneration and corporate social responsibility exhibited negative, albeit statistically insignificant, effects.

These findings suggest that while effective board size and composition are crucial for optimal working capital management, their impact was not statistically significant in this sample. Moderate boards with diverse expertise can provide better oversight and strategic guidance, leading to more efficient working capital management. The negative effect of board remuneration suggests that excessive compensation may not necessarily translate into improved working capital management. Similarly, while corporate social responsibility is important, excessive expenditure in this area could potentially impact the company's cash flow and hinder optimal working capital management.

These results align with agency theory, which posits that good corporate governance can mitigate conflicts between shareholders and management. Although not statistically significant in this study, the positive relationship between board size and composition and working capital management supports this theory.

Empirically, while this study contributes to the limited literature on the relationship between corporate governance and working capital management in Nigeria, findings from other studies are mixed. Kumar and Jindal (2019), Kantudu *et al.,* (2016), Njoku (2017) and Njoroge (2017) found a significant positive effect of corporate governance, specifically board size, board composition and audit committee size, on working capital, while Tahir *et al.,* (2019) and Heider et al. (2019) observed a negative impact. This study's results, while not statistically significant, suggest that the impact of corporate governance on working capital management depends heavily on the effectiveness of its implementation. Effective governance practices, characterized by strong board oversight and appropriate resource allocation, are likely to contribute to optimal working capital management.

**5.0 Conclusion and Recommendations**

The study concludes that corporate governance variables exhibit heterogeneous effects on working capital management in the selected Nigerian consumer goods companies, although these effects were found to be statistically insignificant.

Based on these findings, the following recommendations are made: First, Nigerian manufacturing firms should prioritise the adoption of sound corporate governance practices to enhance their working capital management. This includes ensuring a moderate board size composed of highly qualified and knowledgeable individuals who can make informed decisions for the company's benefit. Second, the board of directors should prioritise the company's interests by ensuring that board remuneration is benchmarked against industry averages and that the board effectively fulfils its oversight functions to enhance working capital management. Lastly, management should strive to achieve a balance between corporate social responsibility (CSR) and working capital management. While excessive CSR expenditure can negatively impact cash flow, neglecting CSR can also negatively impact the company's relationship with its community. Professional management expertise is crucial to navigating this balance and ensuring both effective working capital management and responsible corporate citizenship.

**References**

Akinsulire, O. (2011). *Financial management* (7th Ed.) El-Toda ventures Ltd.

Ammarah, C., & Nisar, A. (2015). Does corporate governance affect working capital
 management efficiency of firms? Evidence from manufacturing sector of Pakistan. Hailey College of Commerce, *University of the Punjab, Lahore, Pakistan,* *27*(6), 6255-6260.

Assey, L.H; Su, A.X., & Parveen, S. (2020). Effect of working capital management on financial performance: Evidence from Listed Firms at Dare S Salaam Stock of Exchange. *IOSR Journal of Business and Management (IOSR-JBM), 22*(4), 01-08*.*

Ayodeji, E.A. (2011). *Introduction to financial management (1st ed.)*, Emboss Foyo.

Braimah, A., Mu, Y., Quaye, I., Ibrahim, A.A. (2021). Working capital management and Smes profitability in emerging economies: The Ghanaian Case. *Sage Open*, 1-16

Clarke, P. (2007). *International Corporate Governance: A comparative Approach*. Oxon: Routledge.

Coleman, M., Wu, M., & Baidoo, M. (2020). Corporate governance and working capital policy: An Unobserved Influence. *Emerging Economy Studies 6*(1) 106–122

George, C.N. (2017). The Impact of Corporate Governance on Working Capital Management in Nigerian Organizations. <https://scholarworks.waldenu.edu/dissertations>.

Gill, A., & Biger, N. (2010). The impact of corporate governance on working capital management efficiency of American manufacturing firms. *Managerial Finance 39*(2), 116-132.

Haider, I., Khan, R., & Suhail, M. (2015). The Impact of corporate governance on working capital management (WCM) efficiency: An Empirical Study of Manufacturing Firms of Pakistan. *Global Economic Review, 4*(1), 141-149

Haslindar, I., Fazilah, M., & Abdul, S. (2011). Corporate governance and agency costs. In K. J. Anil & K. Makhija (Eds.), *International corporate governance (Advances in financial economics*, 14, 109-130. City, State: Emerald Group Publishing Limited. doi:10.1108/S1569-3732(2011)0000014008

Hung, N. T., & Su Dinh, T. (2022). Threshold effect of working capital management on firm profitability: evidence from Vietnam. *Cogent Business & Management*, *9*(1). <https://doi.org/10.1080/23311975.2022.2141090>

Ikotun, T. (2014). *Banking law, ethics and corporate governance* (2nd ed.). Kayode Prints, Osogbo, Nigeria.

Johanson, D., & Ostergeren, K. (2010). The movement toward independent directors on boards: A comparative analysis of Sweden and the UK. Corporate Governance. *An International Review, 18*(6), 527–539.

John, K., & Senbet, L.W. (1998). Corporate governance and board effectiveness. *Journal of Banking & Finance, 22,* 371-403.

Kantudu, A.S., Bahamman, S.M., & Mohammad, S. (2016). Corporate governance mechanism and cash conversion cycle management of listed conglomerates in Nigeria. *ILIMI Journal of Arts and Social Sciences (IJASS), 2*(1), 23-40

Khajar, I., & Udin, H.H. (2020). Working capital management, firm size and firm profitability. *International Journal of Economics and Management Systems, 5*(1), 111-117

Kumar, V., & Jindal, S. (2019). Impact of corporate governance on the profitability and working capital management: An empirical study of Indian manufacturing sector. *Science, Technology and Development, 8*(10), 190-201.

McColgan, P. (2001). Agency theory and corporate governance: a review of the literature from a UK perspective. *Department of Accounting & Finance, University of Strathclyde, Glasgow*.

Muhammad, S., Rabi, U. S. J., Ibrahim, F. B., & Ahmad, T. H. (2015). The effect of working capital management on corporate profitability: Evidence from Nigerian food product firms. *Applied Finance and Accounting*, *1*(2), 55-63.

Naz, M. A., Ali, R., Rehman, R. U., & Ntim, C. G. (2022). Corporate governance, working capital management, and firm performance: Some new insights from agency theory. *Managerial and Decision Economics*, *43*(5), 1448-1461.

Nguyen, A.H., Pham, H.T., & Nguyen, H.T. (2020). Impact of working capital management on firm’s profitability: Empirical Evidence from Vietnam, *of Asian Finance, Economics and Business, 7*(3), 115-125.

Njoku, G.C. (2017). The impact of corporate governance on working capital management in Nigerian organizations. (Walden Dissertation and Doctoral Studies). <https://scholarworks.waldenu.edu/dissertations/4395/>.

Njoroge, J.N. (2017). Effect of corporate governance practices on working capital management for listed companies at the Nairobi Securities Exchange. (Master’s Dissertation in Finance, University of Nairobi). <https://erepository.uonbi.ac.ke/handle/11295/102524>.

Nobanee, H., & Al-Hajjar, M. (2009). Working capital management, operating cash flow and corporate performance. *Operating Cash Flow and Corporate Performance*, *2*(1), 122- 161.

Ojeka, S., Adegboye, A., & Dahunsi, O. (2021). Audit committee characteristics and non- performing loans in Nigerian deposits banks. *European Journal of Accounting, Auditing and Finance Research, 9*(4), 27-41.

Okerekeoti, C.U. (2012). Effect of working capital management and financial performance offood and beverage companies in Nigeria. *International Journal of Advanced Academic Research, 7*(8), 19-30

Oko, S.U., Ogah, J.I., & Isek, F.C. (2020). Empirical study on working capital management policies and firms performance: A Study of Selected Manufacturing Firms in Nigeria. *Global Scientific Journals, 8*(6), 590-603*.*

Olaniyi, A., & Nzewi (2019). Working capital management of the financial performance of basic materials manufacturing companies in Nigeria. *International Journal of Trend in Scientific Research and Development*, *4*(2), 958-968.

Olayemi, S. (2020). Working capital management-performance relationship: A Study of Small and Medium Enterprises in Akure, Nigeria. *International Journal of Small Business and Entrepreneurship Research, 8*(2), 32-42.

Otekunrin, A.O., Nwanji, T.I., Fagboro, G.D., Olowookere, J.K., & Adenike, O. (2021). Does working capital management impact an enterprise’s profitability? Evidence from selected Nigerian firms. *Problems and Perspectives in Management, 19*(1), 477- 486. doi:10.21511/ppm.19 (1).2021.40

Saad, N. (2010). Corporate Governance compliance and the effects to capital structure in Malaysia. *International Journal of Economics and Finance*, *2,* 105-114.

Shleifer, A., & Vishny, R. W. (1997). A survey of corporate governance. *The journal of finance*. *52*(2), 737-783.

Tahir, S.H., Afzal, A., Liaqat, S., Tahir, F., & Ullah, M.R. (2019). Corporate governance, working capital management and firm risk: Empirical Evidence from Pakistan Stock Exchange (PSX). *Journal of Managerial Sciences, 14*(4), 66-73.

Vargas-Hernández , J.G., & Teodoro-Cruz , M.E. (2018). Corporate governance and agency theory: Megacable Case. *Corporate Governance and Sustainability Review, 2*(1), 59-69.

Wambua, K. (2011). Effects of corporate governance on savings and credit co-operatives (SACCOS) Financial Performance in Kenya. Unpublished MBA Project. *University of Nairobi, 1,* 28-33

Yakubu, A., Dangana, U., & Olaifa O.O. (2020). Working capital management and financial performance of selected quoted firms in Nigeria.  *International Journal of Research and Scientific Innovation, 7*(4)*,* 62-67.

Yusoff, W. F. W., & Alhaji, I. A. (2012). Insight of corporate governance theories. *Journal of Business and Management*, *1*(1), 52-63.

Zogning, F. (2017). Agency theory: A critical review. *European Journal of Business and Management*, *9*(2), 1-8.