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Corporate Performance and Working Capital Management in Nigeria during the COVID -19 Pandemic Period

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ABSTRACT: The Covid-19 pandemic brought the world to its knees. The demand for goods and services plummeted and adversely impacted the projected revenues of most entities. While the service industries were able to continue in operations by moving their services online, the manufacturing industry has not been that lucky. The pandemic period has been one of tightened cash flows, reduced revenues, poor cash conversion cycle and inadequate working capital. Most entities impacted by the pandemic explored many creative means to better manage their working capital. This study therefore examines the relationship between working capital management and profitability of public listed manufacturing companies in Nigeria during the Covid-19 Pandemic using panel data between 2019 and 2020. Data for this study were sourced from the financial reports of 10 listed entities in the manufacturing space. The study adopts the panel regression approach and summary of descriptive statistics. The findings from the regression analysis revealed that working capital management respectively has significant effects on the manufacturing firms' operating profitability margin , return on assets and return on equity during Covid-19 period in Nigeria.. Consequently the study concludes that working capital management strategies significantly impacts on corporate performance in Nigeria thus justifying the negative fluctuation in the operating performance of the firms Nigeria during Covid-19 period.

Keywords: Pandemic, Nigeria, Working Capital, profitability and manufacturing firms.

1. INTRODUCTION

1.1 Background to the Study

As a Banker who manages the accounts and monitors the day-to-day cash flow activities of a number of big corporate clients across different sectors of the Nigerian economy, I observed that during the earliest stage of the Covid-19 pandemic, most of my corporate clients were faced with a number of working capital challenges. Banks were inundated with requests to restructure/extend/rollover maturing obligations. Some of these companies either requested for an enhancement of existing overdraft lines of credit or fresh ones to enable them to meet their short-term financing needs such as payment of salaries and settlement of other trade creditors. At a point, even the Central Bank of Nigeria (CBN) had to grant a moratorium period of 1 year (renewable at expiration) for qualifying companies to give them the required breather from debt service, temporarily.

Being a naturally curious individual, I decided that there is a need to establish if there is, in actual fact, a relationship between the Covid-19 event and profitability as well as how an effective working capital

management system may impact profitability during a period that has been adjudged as one of the lowest in the history of human existence.

The COVID-19 outbreak reached Nigeria's shores at a time when the country was only beginning to emerge from a protracted economic crisis. The global pandemic crisis created a slew of difficulties, including accelerated economic decline, job losses, elevated inflationary pressure, higher unemployment rates, and increased crime rates (Iwedi, Kocha and Onaakpono, 2020). The pandemic posed extraordinary problems. The world as a whole saw a dramatic decline in demand for a variety of commodities and services, borders were blocked for nearly unprecedented lengths of time, and unrestricted movement within each affected country was restricted in attempt to stem the virus's tide. Indeed, the world as we knew it has shifted dramatically since December 31, 2019, when the virus was first reported to the World Health Organization (WHO). Countries were forced to impose quarantine measures. Individuals infected with the virus were segregated from the general population during their treatments, until they were either virus-free or died from it. Hospitals got overcrowded. Businesses that rely on the importation of raw materials were unable to operate due to border closures and airline restrictions. The few who were able to create saw a significant fall in aggregate demand. Businesses with proactive management/leadership, on the other hand, recognized early on that their response to the novel COVID-19 epidemic would have a substantial impact on their operations. As a result, several of them swiftly implemented initiatives such as remote work, on-site/off-site employment rotations, job layoffs, output reductions, and pricing reductions, among others.

Working capital management is critical for every firm that wishes to achieve its short term financial responsibilities and goals. Cash management, receivables management, inventory management, and accounts payable management are the four (4) primary components of working capital. According to Akinsulire (2013), a company's success in any business endeavour is contingent on the management's ability to forecast and regulate its cash flows. Cash management, according to Olowe (2018), is concerned with the efficient management of cash in order to maintain an optimal level of cash in a firm's working capital. Certain businesses were able to innovate their way out of the crisis, allowing them to adapt to the changes necessary to remain profitable and strong during these trying times. However, not everyone was so fortunate. Nigeria's reliance on imports, primarily from China and other countries of the world with a high incidence of Covid-19 infections, heightened its vulnerability. According to the National Bureau of Statistics (2019), China accounts for 70% of total raw material imports into Nigeria. However, constraints on cross-border commerce have skewed supply chains for manufacturers, which invariably has a negative effect on the Nigerian economy as a whole and, by extension, on the earnings of some enterprises. Manufacturers needed to be more adaptable, local, and sensitive to consumer demands, whether through increased supply or more reliance on e-commerce.

The significant drop in demand for petroleum products all over the world during the lockdown period also impacted the performance of players in the Oil and Gas Sector. It was a period of very low demand which brought the price of crude oil to the lowest ever recorded. At a point, futures were traded at negative prices. The events described above culminated into a period of low profitability or outright losses for most companies in Nigeria. Top companies like Guinness Nigeria, RT Briscoe, all recorded losses in the year 2020.

Working capital management entails planning and controlling current assets and liabilities in such a way that eliminates the risk of being unable to meet short-term obligations on the one hand, and avoids excessive investment in these assets on the other (Eljelly, 2004). The management of a business's working capital is accomplished through a combination of policies and techniques. Inventory management, debt management, or credit policy, and short-term financing management are all included in these policies.

1.2 Statement of Problem

A common metric for working capital management is the cash conversion cycle, which indicates the duration of cash flows within a business. Given the definitions, this research will focus on working capital management issues, more precisely how a business manages its working capital by shortening or lengthening its cash conversion cycle in order to contribute to superior operating profitability. Research on working capital management and firm profitability has been undertaken in both advanced and developing market economies, although this was before to the outbreak of COVID-19. Profitability is critical component to availability of

working capital as well as corporate liquidity , (Akinyomi & Tasie, 2011; Malik, Waseem & Kafayat, 2011). The closure of major cities in Nigeria as a result of the COVID-19 outbreak and the present devaluation of the currency due to the decline in crude oil prices as a result of the COVID-19 Pandemic caused a lot of damage to key sectors of the Nigerian economy particularly the industrial sector. Although a mixed effect were observed in the financial sector service providers because a significant number of them remained operational courtesy of online and internet transactions . The industrial and consumer goods manufacturer were not so privileged to operate as they remained under lock -down together with theirwith most of their inventories and other working capital components.

As a result, it is critical to examine the influence of working capital management and profitability on a sample of chosen enterprises in Nigeria during the COVID-19 Pandemic. As such, the purpose of this study is to conduct an empirical examination of the effect of working capital management on the profitability of selected enterprises in Nigeria.

(Shin & Soenen, 1998). , notes that inability of a business to properly manage its working capital , results in inefficiencies in its operations. Similarly , inadequate working capital management incapacitates a business ability to meet up with supply and demand for their goods or services to consumers and stakeholders .

Additionally, Lamberson (1995) demonstrated the critical role of working capital management in a business's funding even as many business owners and managers struggle to identify the critical drivers of working capital management that might help them increase their company's profitability especially during crisis period like the Covid-19 pandemic.

1.3 Statement of Problem.

The need for this study is predicated on fact that various studies have presented inconsistencies in their findings on the relationship between working capital management indices and corporate performances indicators . While, (Shin Soenen, 1998; Deloof, 2003; Raheman & Nars 2007) disclosed negative relationship between working capital elements and firms profitability , other authors like (Lazaridis & Tryfonidis, (2006) , Nobanee (2000), Oladipo, Adegboyo, and Olugbamiye (2020) and Amusa et al (2016) revealed a favorable effects on manufacturing firms' profitability. The current study while bridging this inconsistency in literature gap in Nigeria, it also intends to unveil how effectively the firms' working capital management strategies influenced the earnings reported by the manufacturing firms in Nigeria during the global Covid -19 pandemic crisis (2019-2020) , when most of the firms were forced to lock down.

1.4 Research Objectives and Hypotheses:

Broadly, the objective of this study is to evaluate the effect of working capital management on the firms' performance during the Covid-19 pandemic on one hand , and to specifically ;

i. determine the effects of working capital (account receivable days, account payable days, average inventory days) on the profitability of selected firms in Nigeria (operating profit margin) during the Covid-19 pandemic.

ii evaluate how the components of working capital (account receivable days, account payable days, average inventory days) impact the profitability of the selected firms in Nigeria (return on asset) during the Covid-19 pandemic.

iii appraise the variables of working capital (account receivable days, account payable days, average inventory days and cash conversion cycle) and the performance of the selected firms (return on equity) during the Covid-19 pandemic.

Sequel to the afore stated objectives , the following study hypotheses are hereby formulated

1. H_0: Working capital management (account receivable days, account payable days, average inventory days) has no significant effect on the profitability of the organization (operating profit margin) during the Covid-19 pandemic
2. H_0: The components of working capital (account receivable days, account payable days, average inventory days) have no significant impact on the profitability of the firm (return on asset)during the Covid-19 pandemic

3. H_0: The variables of working capital (account receivable days, account payable days and average inventory days) have no significant effect on the performance of the firms (return on equity) during the Covid-19 pandemic

1.5 Significance of the Study

This findings from this study contributes to existing knowledge in the field of Financial Management by providing empirical evidence on global covid-19 pandemic induced impacts of working capital on corporate earnings in Nigeria. The study would offer database template for researchers, scholars as well as academics .in their further studies on this subject matter. Above all, the findings of this study could provide working guides for public and private sector agencies' operational planning , decision making and control of firms' resources so as to enhance wealth in the interest of all stakeholders .

1.6 Organization of the Study

This studyis organized into four chapters. Chapter one gives an overview of the entire study, including the statement of the problem, the study's objectives, the research hypothesis, the study's significance or relevance, the study's delimitation and limitation, and the study's organization. The second chapter conducts a review of the literature on working capital management and business success. Chapter three discusses the study's methodology, including the population, sampling approach, research design, data source and collection techniques, and data analysis procedures. Additionally, it describes the relevant variables included in the model, the model selection criteria, and the diagnostic test analysis performed on the model specification utilized in the study. Chapter four discusses the research findings and conclusions.

2. LITERATURE REVIEW

2.1 Conceptual Reviews:

The concept of working capital management remains a critical policy for various public and private organizations due to the impact it has on a business's overall performance (Smith, 1980). This is because the more current assets the firm has , , the less the firm's risk exposures . Working capital management, according to Eljelly (2004), revolves around planning and controlling current assets and current liabilities in such a way it eliminates the danger of being unable to meet short-term liabilities and avoids excessive investment in these assets.

In contrast, Carpenter and Johnson (1983) demonstrated that there is no linear relationship between the level of current assets and the revenue efficiency risk of enterprises; nonetheless, some hints of a possible nonlinear relationship were discovered, albeit they were not statistically significant.

Pandey (2000) describing the structure of a firm's working capital, attempted to distinguish gross working capital (GWC) from net working capital (NWC). Gross working capital is the amount invested by a business in current assets. Current assets comprise cash, debtors (accounts receivables), bills receivable, short-term securities, and inventory stock, while the difference between current assets and current liabilities is referred to as net working capital.

Current liabilities are those debts or obligations of a business that are expected to be paid during an accounting year of operation. They include accounts payable, bill payable, and unpaid expenses (Pandey, 2000). Negative or positive net working capital is possible. When current assets exceed current liabilities, net working capital is positive. When current obligations exceed current assets, it is negative. Net Working Capital (NWC) is most commonly defined as the difference between current assets and current liabilities. NWC can also be defined as the fraction of current assets that is financed with long-term debt. While the Net Working Capital (NWC) liquidity indicator is insufficient for comparing the performance of different organizations, it is extremely beneficial for internal control. The NWC makes a significant contribution when comparing the liquidity of a single company across time. Net Working Capital is consequently anticipated to measure the company's liquidity for the primary cause of working capital management. Meanwhile, working capital management is concerned with managing current assets and liabilities in order to maintain an acceptable level of net working capital.

Numerous corporate failures have been attributed to financial managers' inability to plan and oversee their firms' existing assets and liabilities effectively, according to (Smith, 1973). Due to a lack of appropriate planning for working capital requirements, the majority of businesses frequently have an excess of or a shortage of working capital (Agarwal 1977).
When a business maintains liquidity through borrowing, a difference exists between the profit produced on investments in the assets financed with borrowed funds and the interest payable to creditors. Finally, it can be considered that both a low level of liquidity and a large level of liquidity have related costs (Yeager and Seitz, 1989).

According to Shin and Soenen (1998), effective working capital management is critical for building shareholder value. Working capital management has a major impact on profitability and liquidity. They justified the association between the length of the net trading cycle, business profitability, and risk adjusted stock return using correlation and regression analysis. They discovered a significant negative correlation between the length of a firm's net trading cycle and its profitability. Additionally, they discovered an association between a shorter net trade cycle and higher risk-adjusted stock returns..
Mongrut et al. (2008) asserts that the Cash Conversion Cycle (CCC) provides a detailed and technical definition working capital management determinants. By viewing working capital as the money that are used to operate the business on the short term basis. In a similar vein, Nimalathasan (2010) argued that the academic foundation for the relationship between working capital management and profitability of an organization is explained by the fact that majority of firms regard the amount of cash invested in working capital as well as short term payables as a a financing alternative for the corporate funding which could maximize the firm's value. Furthermore, (Nimalathasan, 2010). views working capital management corporate policy which entails monitoring inventories, accounts receivable and payable, and cash which enhances efficient working capital management system that enables the businesses to recoup high earnings.

2.2 Determinants of Working Capital

A firm's overall working capital requirements are determined by a number of factors, some of which are endogenous and others of which are external. Again, these variables may vary between firms and over time. In general, the following factors should be considered when calculating a firm's working capital requirement: the nature of the business, its scale of operation, its production, its business cycle, seasonality and production policy, its credit policy, its growth and expansion, the level of inflation, operating efficiency, and raw material availability, its depreciation policy, taxation, dividend policy, and retention policy. Mansoori and Muhammad (2012) found that business size, operational cash flow, capital expenditure, and gross domestic product were all negatively connected with working capital management when evaluating the determinants of working capital management across Singapore firms using random and fixed effects.

However, they discovered that more profitable organizations have a longer cash conversion cycle. Additionally, they discovered no correlation between cash conversion cycle (CCC) and debt ratio. Chiou and Cheng (2006) sought to ascertain the essential aspects influencing working capital management in Taiwanese businesses. The study incorporated both microeconomic and firm-specific variables. They discovered that debt ratios, operating cash flows to total assets, and working capital management are all adversely connected with working capital management, but company age, return on assets (ROA), and working capital management are all positively correlated. Additionally, their findings suggested that enterprises face increased working capital management WCM obligations during economic downturns. Zariyawari et al. (2010) used pooled OLS regression to study the factors of WCM in Malaysian enterprises. They discovered a negative correlation between CCC and firm size, debt ratio, and sales growth. Additionally, their assessment found that enterprises with a higher debt load prefer to cut working capital because the cost of external financing is higher for them.

2.3 Global pandemic crisis and economic impacts:

Working capital management obligations during economic downturns tends to be highly challenging all over the world including Nigeria. The global community have managed to evolve and transit over time in the face growing global health and economic crisis even with some devastating consequences.

Sergio Correia, Stephan Luck, and Emil Verner (2020) examined the impact of the biggest influenza epidemic in US history in the 1918 which lasted between 1918 and 1920 using a number of economic variable to examine the true economic consequences and discovered that in spite of various government interventions to reduce the economic severity of the pandemic impacts on the industrial sectors according to the regression calculations, the 1918 Flu Pandemic resulted in an 18% decline in manufacturing production for counties with the mean degree of exposure. Bank charge-offs also increased in exposed areas, showing an increase in company and consumer failures. This level of impacts further corroborates the assumption that pandemics stifle economic activity of the, more seriously afflicted areas by reducing both supply and demand for goods and services , relative reduction in manufacturing output, loss of employment , devaluation of bank assets growth and as well durable consumption goods (Eichenbaum et al. 2020). This was however the aftermath of a number of measures taken by the various national governments to curb the spreading of the virus .

World Health Organization (WHO) (2020) in their research, classified the coronavirus as (COVID-19) outbreak as a pandemic on11th of 2020. (Gibson 2020) notes that since that pronouncement, COVID-19 has resulted in the loss of hundreds of thousands of lives worldwide, caused significant obstacles for healthcare professionals, as well as the vulnerabilities of national health systems and havoc to businesses and societies (Gibson 2020). worldwide. According to Gibson (2020)

2.4 COVID—19 Economic impacts and economic interventions in Nigeria:

According to Onyekwena and Ekeruche (2020), COVID-19 pandemic remained a wake-up call to policymakers as the unusual and unprecedented nature of the crisis has made it impossible for citizens to rely on foreign health care services and more difficult to solicit for international support given the competing demand for medical supplies and equipment. A more integrated responses spanning several sector such as health, finance, and trade sectors were addressed to structural issues which would make the country less resilient to shocks and limit its range of policy responses.

It is however important to stress that , before the COVID -19 pandemic outbreak, Nigerian economy had been grappling with weak recovery from the 2014 oil glut shock, with a GDP growth tapering around 2.3 percent in 2019. By the end of February 2020, the IMF revised the 2020 Nigerian GDP growth rate was revised from 2.5% to 2 %, due to relatively low oil prices and limited fiscal space. The country's debt profile was not spared as economic analyst estimate put the debt service-to-revenue ratio at 60% as at 2020. Amidst these existing constraining factors, the economic impact of the COVID-19 outbreak therefore aggravated the weakening trend of the aggregate demand thus making it more difficult for the government to weather the COVID -19 economic crisis.

In view of the need to foster faster recovery by the economy, tougher decisions were made, including but not limited to diversifying the country's revenue base away from oil exports and improving investments in the health care sector to ensure that the economy is able to recover quickly from difficult conditions in the future.

The Central Bank of Nigeria (CBN) arranged a number of fiscal stimulus packages , including a 50 billion naira ($138.89 million) credit facility to households and small and medium enterprises most affected by the pandemic, a 100 billion naira ($277.78 million) loan to the health sector, and a 1 trillion naira ($2.78 billion) to the manufacturing sector. In addition, the interest rates on all CBN interventions were revised downwards from 9% to 5% plus a one-year moratorium on CBN intervention facilities .

Efforts were already made to bolster aggregate demand through increased government spending and tax cuts for businesses. The public budget increased from 8.83 trillion naira ($24.53 billion) in 2019 to 10.59 trillion naira ($29.42 billion) in 2020, representing 11 percent of the national GDP, while small businesses were exempted from company income tax , just as the tax rate for medium-sized businesses was revised downwards from 30% to 20% percent

As evidenced by the assessments above, global and national crises such as the Covid-19 epidemic and the Ebola crisis have severely affected the economy, and these negative consequences will continue for some time following the disaster. Thus, economies, corporations, governments, and societies must always demonstrate resilience by devising strategies to ensure that performance levels are maintained.

2.5 Empirical Review

Various authors have articulated the importance of strategic agility, resilience, and entrepreneurship in the fight against COVID-19 as well as the management and business implications of COVID-19 from an Asian perspective. They have also tried to explore the impact of COVID-19 on economies, businesses, and government support for businesses and communities, as well as the consequences for global supply chain disruptions, (Yipeng Liu, Jong Min Lee, and Celia Lee 2020)

They contended that once the crisis passes, the international economy will be reinvigorated via the efforts and collaborations of research, industry, and governments

However , empirical literature specifically , addressing working capital management nexus with company performance from various perspectives and contexts during the recent Covid 19 pandemic era is scarce , hence the justification for this current study. Interestingly, past authors delved greatly on working capital management and company performance under systematic risks challenges with inconsistencies in their results . For instance, Amaldi, Novak, Roscigno, and Zhang (2021) examined the influence of working capital management regulations on Czech manufacturing SMEs for the period between 2014 and 2018 using individual firms' working capital determinants as independent variables and leverage as a control variable. Dynamic panel data analysis methodology applied revealed a negative association between profitability and inventories turnover ratio , implying that investing in inventories and obtaining extensions from suppliers incur additional costs that reduce profitability.

Oladipo, Adegboyo, and Olugbamiye (2020) conducted research on the effects of working capital management on profitability in manufacturing enterprises in Nigeria by adopting the auto-regressive distributed lag (ARDL) analysis technique and found that cash and bank balances, trade payables and receivables all had a favorable effects on manufacturing firm profitability.

Madishetti and Kibona (2013) investigated the effect of receivables and payables management on the return on assets (ROA) of Small and Medium-Sized Enterprises (SMEs) in Tanzania, utilizing a sample of thirty-eight (38) SMEs from the Dar-Es-Salaam and Morogoro areas for a five-year period ending March 31, 2006 and ending March 31, 2011 employing pearsons correlation coefficient on univariate series and discovered that as average payment period reduces, turnover increases, as return on asset increases as well. This implied the existence of a negative correlation between average payment period and firm's performance .

Panigrahi (2013) conducted a study on the relationship between inventory management and return on assets (ROA). using case study of Indian cement manufacturing firms between 2001 and 2010 on a randomly selected sample of five (5) leading Indian cement companies and discovered a significant negative linear relationship between inventory conversion period and return on assets.

Nzioki et al. (2013) investigated the influence of working capital management on the return on assets (ROA) of manufacturing companies listed on the Nairobi Securities Exchange (NSE) on nine (9) manufacturing enterprises that were listed on the NSE using multiple regression and correlation analysis methods and the results indicate that the return on asset (ROA) was positively connected with average collection period (ACP) and average payment period (APP) but negatively correlated with return on asset (ROA) was non-significant.

Soekhoe (2012) used correlation and regression analysis approaches to examine seventy (70) publicly listed firms' profitability and working capital variables' relationship in Dutch from 2006 to 2010 and discovered negative relationship between the profitability and the accounts payable and receivable periods respectively ..

Napompech (2012) collected data on 255 corporations from the Thai stock exchange over a three-year period, from 2007 to 2009. The 255 businesses operate in seven (7) industries: consumer items, manufacturing, information technology, agriculture and food resources, construction and building materials, and service. Napompech (2012) examined the association between variables using descriptive statistics, correlation, and regression analyses. The findings suggest a negative correlation between return on asset and inventory conversion and receivables collection timeframes.

Rehman and Anjum (2013) investigated the profitability effects of working capital management on (10) ten Pakistan Cement sector listed firms on Karachi Stock Exchange using data for the period between 2003 and 2008 and employing regression analysis approach and found inverse relationship between working capital management and profitability of companies in Pakistan.

Samilogu and Demirgunes (2008) examined the effect of working capital management on firm profitability in Turkey. The findings suggested that the accounts receivable and inventory periods have a considerable negative impact on the profitability of the organization. This means that when the duration of these variables increases, profitability falls, or vice versa. Additionally, sales growth and leverage had a substantial impact on profitability, both favorably and negatively. This indicates that any rise in sales results in an increase in profits, whereas any increase in debt results in a decrease in profitability.

Deloof (2003) discovered a substantial negative link between gross operating income and the number of days accounts receivable, inventory, and accounts payable of Belgian enterprises using correlation and regression analyses. Managers can add value to their shareholders by reducing the number of days' accounts receivable and inventories to a manageable level.

Oladipo, Adegboyo, and Olugbamiye (2020) conducted research on the effects of working capital management on profitability in manufacturing enterprises in Nigeria by adopting the auto-regressive distributed lag (ARDL) analysis technique and found that cash and bank balances, trade payables and receivables all had a favorable effects on manufacturing firm profitability.

Olayinka (2012) investigated the effect of working capital management on profitability of selected quoted firms in Nigeria using data sourced from a sample of 68 Nigerian non-financial firms for the period 1997-2007). Results suggest that firm's profitability is reduced by lengthening the number of days of account receivable while shortening the cash cycle improves profitability.

Akindele and Odusina (2015) studied working capital management and firms' profitability in Nigeria employing data obtained from audited financial statements of twenty-five (25) Nigerian companies from 2005-2011 analysed by multiple regression method and found a negative relationship between working capital management and profitability of firms.

In order to provide evidence of the relationship between company's profitability and working capital management, Oladele and Tasie (2011) conducted a study on six (6) Nigerian manufacturing firms using data randomly sourced from the firms' audited annual reports and analysed using correlation tool and discovered a negative correlation between working capital management and profitability of firms.

Dapo and Teju (2017) examined the impact of working capital management on performance and profitability of manufacturing firms. Data for the study were obtained from a sample of twenty (20) manufacturing enterprises listed on Nigerian Stock Exchange (NSE) from 2005-2014. The results of multiple regression indicated that WCM has significant impact on profitability of the firms.

Dauda, Martins and Luka (2016) studied working capital management and profitability of listed Nigerian food product companies. The aim was to examine the effect of working capital management on profitability of listed companies on NSE for the period 2002-2011. Data obtained from annual reports of the companies were analyzed using panel data regression technique. The result revealed a positive relationship between cash conversion cycle and return on assets of the firms.

Lara and Martha (2018) conducted a study on the impact of WCM on the financial performance of manufacturing enterprises measured by ROA of firms. Data for the study were obtained from financial statements of twenty-two (22) manufacturing companies located in Lagos and Ogun states of Nigeria. Results of multiple regression revealed that WCM has significant impact on ROA of the companies.

Nkechi, John and Natali (2016) did a study on working capital management impact on profitability and growth of industry using data obtained from financial statements of seven (7) beverage manufacturing enterprises located in Lokoja the capital of Kogi State-Nigeria. Results of multiple regression analysis revealed a significant impact of WCM on profitability of the enterprises.

Ojoade and Tolu (2015) examined the role of working capital management in liquidity management and profitability of firms. Data for the study were obtained from the financial statements of ten (10) manufacturing firms in Lagos state. Using panel analysis, Ordinary Least Square (OLS) and Fixed Effect Estimation (FEE), the

result of the analysis showed that working capital management can impact positively on ROA suggesting a relationship between working capital management and ROA.

2.6 Theoretical Review:

The theoretical underpinnings of this study centers around the much debated motives for holding money by individuals as well as firms as proposed by Irving Fisher in 1911 termed " The Quantity Theory of Money" The quantity theory money as popularized by numerous authors is used to attest and emphasize on the need to hold cash or money otherwise termed as working capital.

2.6.1 According to the quantity theory of money, money is sourced solely for the purpose of making payments for present ,previous and future transactions. Irving Fisher (1911) in describing the motives for holding money by firms and individuals, presented the motives as a model of exchange or equation of exchange given as:

MV=PT ;

Where : M denotes the nominal stock of money in circulation,

V denotes the transaction velocity of money, defined as the average number of times a given quantity of money changes hands in transactions,

P denotes the average price of all transactions, and

T denotes the total number of transactions during the time period.

This implies that MV and PT can be used to calculate the total value of transactions over a specified time period and must therefore be related . Thus, 'the equation' is a true identity; it simply states that the total amount of money exchanged in transactions equals the value of quantity of goods and services is sold. By implication , for businesses to conserve cash or working capital there is need to monitor the volume of goods and services to acquire at a given the perceived relationship as explained by the money theory. Hence , firms should endeavor to monitor the variables as presented in the model to manage working capital level or quantity of money the company can hold at any particular point in time.

2.6.2 The Modern Quantity Theory

Milton Friedman reformulated the quantity theory of money as a theory of money demand in 1956, and this current quantity theory has been the foundation for monetarists' thinking (Copeland et al, 2005). Money is viewed as simply one type of financial asset, alongside consumer durables, property, and human wealth, in this idea. According to Friedman, money has a convenience yield in that its possession reduces the time and effort required to conduct transactions. With regards to this theory , managers should endeavor and to review speculative spending as well as investment yield in line with investment horizons which creates impacts on the liquidity position of the firm.

2.7.3 Prescriptive Theory of Working Capital Management : According to Mcinnes (1937) and Diallo & Obotto (2003) in this theory, if working capital is managed according to prescriptive theory then it would be expected that businesses would invest in working capital, finance working capital, monitor factors that influence working capital, manage cash, accounts receivable, inventory, accounts payable, the cash conversion cycle (aggregative approach), and measure and analyze performance to ensure that the long term (fixed) assets are utilized effectively and efficiently. Optimal management of working capital for profitability is the key emphasis of the theory. The emphasis of the theory underscores its relevance to the current study for the fact that effective working capital (cash) management is one of the major endogenous policies needed in Nigerian manufacturing environment for profitable operation .

3. RESEARCH METHODOLOGY

3.1 Research design, Data sources and sampling technique:

This study used inferential and expo- facto research approach to examine the impact of working capital management on the profitability of publicly listed enterprises in Nigeria during the COVID-19 pandemic period

Using quantitative based approach secondary panel data were sourced from various annual reports of the publicly listed companies in the manufacturing sector of the Nigerian Stock market . Convenience and purposive sampling methods were adopted to sample data from the population of 177 listed domestic companies in Nigeria as at 2020 trading period **.** A total of ten (10) listed companies across the (13) thirteen manufacturing sector were selected based on accessibility and availability of needed data as at 2021 reporting year.

3.2 Data analysis techniques:

Data collected were analyzed using the panel regression approach on panel data of 10 listed firms using a period from 2019 and 2020. The following base model was used, a multiple regression equation used by a researcher for predictions purpose. The linear regression model utilized in this investigation, was modified from Shehu et al. (2013) and Ogare, (2013). Consistent with past research, this model changed and expanded the model evaluated previously, and the ordinary least squares procedure was led by the following linear model.

3.3 Model Specification

The model specified in this study is based empirical studies on the effect of working capital on the performance of manufacturing firms during Covid-19 period. In this study, the working capital measurement indices are captured respectively by account payable days, and average inventory days and account receivable days while Banks' Performance is each represented by return on asset and return on equity and profitability margin.

The model for investigation of the relationship between these variable are as specified as follows.

1. $OPM_{it} = \beta_0 + \beta_1 ARD_{it} + \beta_2 APD_{it} + \beta_4 AID_{it} + \varepsilon_{it}$ i

2. $ROA_{it} = \beta_0 + \beta_1 ARD_{it} + \beta_2 APD_{it} + \beta_4 AID_{it} + \varepsilon_{it}$ ii

3. $ROE_{it} = \beta_0 + \beta_1 ARD_{it} + \beta_2 APD_{it} + \beta_4 AID_{it} + \varepsilon_{it}$ iii

Where:

OPM = Operating profitability margin

ROA = Return on Asset

ROE= Return on Equity

APD = Average Payable Days

AID = Average Inventory Days

ARD = Average Receivable Days

β_o = Regression intercept

β_1 --β 4= Parameters

3.4 OPERATIONAL VARIABLES AND DECISION CRITERIA:

The operational variables are exogenous and endogenous factors which are manipulated to determine their individual and collective power of inference about the subject matter. Exogenous variables such as liquidity ratio, average collection period, debtors collection period and inventory conversion period (ICP). Each of these independent variables is discussed in detail in the literature section, but for the sake of simplicity, the terminology is discussed below.

Inventory conversion period measures the number of times, on average, the inventory sold during the period.

Inventory conversion period = inventory × (365 number of days for lockdown) Debtors Collection Period (DCP) is an independent variable used as measurement for the Collection Policy

Debtors collection period = account receivable × 365/Net Sale. Liquidity ratio is one of independent variable which affects profitability of firms and is measured as; Current Assets (CA)/Current Liabilities

The endogenous proxy factors comprising of profitability margin and return on assets as dependent variables are measured as : Net Profitability Margin (NPM) given as net profit after tax divided by total sales

while the return on asset is given as Net profit after tax divided by total assets or total investible funds within the period

The three research hypotheses are tested for either rejection or acceptability based on the panel regression result .

The Null hypothesis is rejected if the at a level of significance of less than 5%

H:0 = rejected where $\alpha \leq 0$. The study apriori expectation indicates that the parameters ; $\beta 1 \leq 1$, $\beta 2 \geq 1$ and $3\beta \leq 1$ or 0

3.5 MODEL ESTIMATION:

Panel data collected were subjected to series of pre - panel regression preliminary diagnosis tests for normally, stationarity and suitability for the use of fixed effect or random effect panel regression methodology . These include descriptive statistical tests, Augment Dickey fuller test (ADF)and Haustman Tests respectively.

4. DATA ANALYSIS, RESULTS AND DISCUSSION OF FINDINGS

4.1 Descriptive Analysis

Descriptive statistics provides some useful insights about the data set of a study because it gives an account of the shape and nature of a data set. Table 1 presents the descriptive statistics of the data run for this study in terms of the minimum, maximum, mean, standard deviation, and the number of observations for the study.

Table 1Summary of Descriptive Statistics

	ROA%	ROE%	OPM%	AID	APD	ARD
Mean	20.07879	102.1532	15.03200	94.43939	100.1326	48.15023
Median	30.23255	43.30980	22.77518	91.16720	71.27491	51.46712
Maximum	36.80726	686.2218	25.04049	182.3816	261.5953	84.58235
Minimum	0.442013	0.916095	0.816823	51.66407	43.89714	12.83528
Std. Dev.	14.29627	169.7773	10.00136	31.30863	56.98475	16.76345
Skewness	-0.359464	2.527359	-0.432255	1.646800	1.494420	-0.134843
Kurtosis	1.245901	8.626716	1.238819	5.631322	4.409440	3.384964
Jarque-Bera	2.994765	47.67509	3.207614	14.80971	9.099738	0.184106
Probability	0.223715	0.000000	0.201129	0.000608	0.010569	0.912057
Sum	401.5757	2043.064	300.6401	1888.788	2002.653	963.0046
Sum Sq. Dev.	3883.284	547662.1	1900.517	18624.38	61697.98	5339.254
Observations	20	20	20	20	20	20

Source: E-Views 10 Output

Table 1, shows that the mean for return on asset (ROA), return on Equity (ROE), operating profit margin (OPM), average inventory days (AID), account payable days (APD) and account receivable days (ARD) are 20.07879, 102.1532, 15.03200, 94.43939, 100.1326 and 48.15023 respectively.

Evidence from the table 1, shows the median for return on asset (ROA), return on Equity (ROE), operating profit (OPM), average inventory days (AID), account payable days (APD) and account receivable days (ARD) are 30.23255, 43.30980, 22.77518, 91.16720, 71.27491 and 51.46712.

Also, the table 1, shows that the maximum values are 36.80726, 686.2218, 25.04049, 182.3816, 261.5953 and 84.58235 for the variables return on asset (ROA), return on Equity (ROE), operating profit (OPM), average inventory days (AID), account payable days (APD) and account receivable days (ARD) respectively. The minimum values for the variables return on asset (ROA), return on Equity (ROE), operating profit (OPM), average inventory days (AID), account payable days (APD) and account receivable days (ARD) are 0.442013, 0.916095, 0.816823, 51.66407, 43.89714 and 12.83528 respectively. From table 1, the standard deviation variables return on asset (ROA), return on Equity (ROE), operating profit (OPM), average inventory days (AID), account payable days (APD) and account receivable days (ARD) are 14.29627, 169.7773,

10.00136, 31.30863, 56.98475 and 16.76345 respectively. Table 1, shows that return on Equity (ROE), average inventory days (AID) and account receivable days (ARD) are positively skewed while return on asset (ROA), operating profit (OPM) and account payable days (APD) is negatively skewed respectively.

From table 1, ROA (1.245901) and OPM (1.238819) are platykurtic because their distribution is more peaked than normal. While ROE (8.626716), AID (5.631322), APD (4.409440) and ARD (3.384964) are leptokurtic because the height of the distribution has a relatively high peak than normal. Table 1, also show that ROA, OPM and ARD are normally distributed because their corresponding p-value 0.223715, 0.201129 and 0.912057 are greater than 5% significance level. The variables ROE, AID and APD are not normally distributed because their corresponding p-values 0.00000, 0.000608 and 0.010569 are less than 5% significance.

4.2 Hypotheses Testing

This section deals with examination of the relationship that exist between the variables identified in the study as stated in the research objectives, research questions and the hypothesis. The model formulated earlier is tested using the simple linear regression. Note that the chosen alpha (α) at 5% significant level is 0.05

4.2.1 Test of Hypothesis One (H_{01})

Research Objective 1: To determine the effects of working capital (account receivable days, account payable days, average inventory days) on the profitability of selected firms in Nigeria (operating profit margin) during Covid-19 period

Research Hypothesis 1: H_0: Working capital management (account receivable days, account payable days, average inventory days) has no significant effect on the profitability of the organization (operating profit margin) during Covid-19 period

Research Model 1: $OPM_{it} = \beta_0 + \beta_1 ARD_{it} + \beta_2 APD_{it} + \beta_4 AID_{it} + \varepsilon_{it}$ ... equ 1

Table 2 Hausman Test

Correlated Random Effects - Hausman Test				
Test cross-section random effects				
Test Summary		Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random		6.884930	3	0.0757
Cross-section random effects test comparisons:				
Variable	Fixed	Random	Var(Diff.)	Prob.
LARD	1.474721	2.453273	0.479399	0.1576
LAPD	-0.688423	-1.771249	0.741174	0.2085
LAID	-2.777270	-1.185859	0.901005	0.0936

Source: E-Views 10 Output

The Hausman's test discriminates between the fixed and random effect models as presented in Table 4.4.3. The Hausman's chi-square statistics of 0.0757 is insignificant at 5%. Hence, it appears there is no correlation between the error term and one or more independent variables. Therefore, the random effect model is considered to be capable of generating more consistent estimate as against the fixed effect model. Thus, our discussion is based on the random effect model as presented in Table 3

Table 3 Random effect Regression for Hypothesis One

Dependent Variable: LOPM				
Method: Panel EGLS (Cross-section random effects)				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
LARD	2.453273	0.313868	7.816253	0.0000
LAPD	-1.771249	0.293508	-6.034752	0.0000
LAID	-1.185859	0.415078	-2.856952	0.0114
C	2.715677	0.804592	3.375224	0.0039
	Effects Specification			

R-squared	0.797746	Mean dependent var	0.527842
Adjusted R-squared	0.759823	S.D. dependent var	0.291463
S.E. of regression	0.142840	Sum squared resid	0.326450
F-statistic	21.03612	Durbin-Watson stat	2.285685
Prob(F-statistic)	0.000008		

Source: E-Views 10 Output

From the panel least square results shown in Table 3 above, coefficient of determination (R^2) for the model is 0.759823 indicating the strength of the explanatory variables to explain changes/variations that take place in the dependent variable. It implies that, the explanatory variables explain or account for 74.7 percent of variation in the dependent variable. That is, 74.7% of the variations in operating profit margin (OPM) are explained by account receivables days (ARD), account payable days (APD) and average inventory days (AID). In other words, about 25.3 percent of variation in the dependent variable is caused by other factors not included in the model. In line with the output of the analysis, the model will appear with its estimates as follows:

OPM_{it} = 2.715677+2.453273ARD_{it} -1.771249APD_{it} -1.185859AID_{it}+Ɛ… …….1

The coefficient of account receivables days (ARD)assumes a positive and statistically significant value. This implies that one percentage point rise in account receivables days (ARD) increases operating profit margin (OPM) by 2.453273percent. The coefficient of account payable days (APD) assumes a negative and statistically significant value. This implies that one percentage point rise in account payable days (APD) will decrease operating profit margin (OPM) by 1.771249percent. The coefficient of average inventory days (AID) assumes a negative and statistically significant value. This implies that one percentage average inventory days (AID) increases operating profit margin (OPM) by 1.185859percent.

The robustness of this result is further buttressed by an F-statistic of 21.03612 while the Durbin-Watson statistic of 2.285685 clearly indicates that there is no effect of serial correlation among the variables used in the study. With the Probability of F-statistic of 0.000008, it is significant enough to conclude that working capital management (account receivable days, account payable days, average inventory days) has significant affect on the profitability of the organization (operating profit margin) during Covid-19 period.

4.2.2 Test of Hypothesis Two (H_{02})

Research Objective 2: To evaluate how the components of working capital (account receivable days, account payable days, average inventory days) impact the profitability of the selected firms in Nigeria (return on asset) during Covid-19 period

Research Hypothesis 2: H_0: The components of working capital (account receivable days, account payable days, average inventory days) have no significant impact on the profitability of the firm (return on asset) during Covid-19 period

Research Model 2: $ROA_{it} = \beta_0 + \beta_1 ARD_{it} + \beta_2 APD_{it} + \beta_4 AID_{it} + \varepsilon_{it}$ 2

Table 4 Hausman Test

Correlated Random Effects - Hausman Test				
Test cross-section random effects				
Test Summary		Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random		6.936966	3	0.0739
Cross-section random effects test comparisons:				
Variable	Fixed	Random	Var(Diff.)	Prob.
LARD	1.406520	2.315172	0.332500	0.1151
LAPD	-0.802494	-1.756606	0.573935	0.2079
LAID	-2.859561	-1.679686	0.657583	0.1457

Source: E-Views 10 Output

The Hausman's test discriminates between the fixed and random effect models as presented in Table 4. The Hausman's chi-square statistics of 0.0739 is insignificant at 5%. Hence, it appears there is no correlation between the error term and one or more independent variables. Therefore, the random effect model is considered to be capable of generating more consistent estimate as against the fixed effect model. Thus, our discussion is based on the random effect model as presented in Table 5

Table 5 Random effect regression for hypothesis two

Dependent Variable: LROA

Method: Panel EGLS (Cross-section random effects)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LARD	2.315172	0.452711	5.114017	0.0001
LAPD	-1.756606	0.442106	-3.973269	0.0011
LAID	-1.679686	0.583576	-2.878267	0.0109
C	3.956308	1.094032	3.616263	0.0023
	Effects Specification			
R-squared	0.694968	Mean dependent var		0.319545
Adjusted R-squared	0.637775	S.D. dependent var		0.229173
S.E. of regression	0.137928	Sum squared resid		0.304387
F-statistic	12.15117	Durbin-Watson stat		2.003830
Prob(F-statistic)	0.000214			

Source: E-Views 10 Output

Interpretation:

From the panel least square results shown in Table 5 above, coefficient of determination (R^2) for the model is 0.637775 indicating the strength of the explanatory variables to explain changes/variations that take place in the dependent variable. It implies that, the explanatory variables explain or account for 63.8 percent of variation in the dependent variable. That is, 63.8% of the variations in return on asset (ROA) are explained by account receivables days (ARD), account payable days (APD) and average inventory days (AID). In other words, about 36.2 percent of variation in the dependent variable is caused by other factors not included in the model. In line with the output of the analysis, the model will appear with its estimates as follows:

$ROA_{it} = 3.956308+2.315172ARD_{it} -1.756606APD_{it} -1.679686AID_{it}+Ɛ$……. 2

The coefficient of account receivables days (ARD) assumes a positive and statistically significant value. This implies that one percentage point rise in account receivables days (ARD) increases return on asset (ROA) by 2.315172percent. The coefficient of account payable days (APD) assumes a negative and statistically significant value. This implies that one percentage point rise in account payable days (APD) will decrease return on asset (ROA) by 1.756606percent. The coefficient of average inventory days (AID) assumes a negative and statistically significant value. This implies that one percentage average inventory days (AID) increases return on asset (ROA)by 1.679686%

The robustness of this result is further buttressed by an F-statistic of 12.15117 while the Durbin-Watson statistic of 2.003830 clearly indicates that there is no effect of serial correlation among the variables used in the study. With the Probability of F-statistic of 0.000214, it is significant enough to conclude that working capital management (account receivable days, account payable days, average inventory days) has significant affect on the profitability of the organization (return on asset) during Covid-19 period.

4.2.3 Test of Hypothesis Three (H_{03})

Research Objective 3: To appraise the variables of working capital (account receivable days, account payable days, average inventory days and cash conversion cycle) and the performance of the selected firms' (return on equity)

Research Hypothesis 3: H_0: The variables of working capital (account receivable days, account payable days and average inventory days) have no significant effect on the performance of the firms (return on equity)

Research Model 3: $ROE_{it} = \beta_0 + \beta_1 ARD_{it} + \beta_2 APD_{it} + \beta_3 AID_{it} + \varepsilon_{it}$ 3

‘

Table 6. Hausman Test

Correlated Random Effects - Hausman Test				
Test cross-section random effects				
Test Summary		Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random		4.547828	3	0.2081
Cross-section random effects test comparisons:				
Variable	Fixed	Random	Var(Diff.)	Prob.
LARD	1.292314	1.304472	0.179014	0.9771
LAPD	-0.927222	-2.116053	0.362906	0.0484
LAID	-1.444515	-0.284514	0.395151	0.0650

Source: E-Views 10 Output

The Hausman’s test discriminates between the fixed and random effect models as presented in Table 6.
The Hausman’s chi-square statistics of 0.2081 is insignificant at 5%. Hence, it appears there is no correlation between the error term and one or more independent variables. Therefore, the random effect model is considered to be capable of generating more consistent estimate as against the fixed effect model. Thus, our discussion is based on the random effect model as presented in Table 7

Table 7. Random effect Regression for hypothesis three

Dependent Variable: LROE				
Method: Panel EGLS (Cross-section random effects)				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
LARD	1.304472	0.575138	2.268102	0.0375
LAPD	-2.116053	0.605726	-3.493414	0.0030
LAID	-0.284514	0.742727	-0.383067	0.7067
C	4.051322	1.312594	3.086500	0.0071
	Effects Specification			
R-squared	0.529719	Mean dependent var		0.253702
Adjusted R-squared	0.441541	S.D. dependent var		0.168644
S.E. of regression	0.126028	Sum squared resid		0.254128
F-statistic	6.007399	Durbin-Watson stat		1.879259
Prob(F-statistic)	0.006089			

Source: E-Views 10 Output

Interpretation and discussion of result

From the panel least square results shown in Table 7 above, coefficient of determination (R^2) for the model is 0.441541 indicating the strength of the explanatory variables to explain changes/variations that take place in the dependent variable. It implies that, the explanatory variables explain or account for 44.2 percent of variation in the dependent variable. That is, 44.2% of the variations in return on equity (ROE) are explained by account receivables days (ARD), account payable days (APD) and average inventory days (AID). In other words, about 55.8 percent of variation in the dependent variable is caused by other factors not included in the model. In line with the output of the analysis, the model will appear with its estimates as follows:

ROE_{it} = 4.051322+1.304472ARD_{it} -2.116053APD_{it} -0.284514AID_{it}+Ɛ… 3

The coefficient of account receivables days (ARD)assumes a positive and statistically significant value. This implies that one percentage point rise in account receivables days (ARD) increases return on equity (ROE) by 1.304472percent. The coefficient of account payable days (APD) assumes a negative and statistically significant value. This implies that one percentage point rise in account payable days (APD) will decrease return on equity (ROE) by 2.116053percent. The coefficient of average inventory days (AID) assumes a negative and statistically

significant value. This implies that one percentage average inventory days (AID) increases return on equity (ROE) by 0.284514percent. The robustness of this result is further buttressed by an F-statistic of 6.007399 while the Durbin-Watson statistic of 1.879259 clearly indicates that there is no effect of serial correlation among the variables used in the study. With the Probability of F-statistic of 0.006089, it is significant enough to conclude that working capital management (account receivable days, account payable days, average inventory days) has significant affect on the profitability of the organization (return on equity) during Covid-19 period.

4.3 Discussion of Findings:

The finding from the hypotheses testing shows that working capital management (account receivable days, account payable days, average inventory days) has significant effect on the profitability of the organization (operating profit margin) during Covid-19 period. The regression coefficient shows that account receivables days (ARD) is positively associated with operating profit margin, account payable days (APD) and average inventory days (AID) are negatively associated with operating profit margin. The implication of this finding is that an increase in account receivable days during covid-19 will cause a rise in operating profit margin while an increase in account payable days (APD) and average inventory days (AID) will have an adverse effect on operating profit margin.

The finding from hypothesis two shows that working capital management (account receivable days, account payable days, average inventory days) has significant effect on the profitability of the organization (return on asset) during Covid-19 period. The regression coefficient shows that account receivables days (ARD) is positively associated with return on asset, account payable days (APD) and average inventory days (AID) are negatively associated with return on asset. The implication of this finding is that an increase in account receivable days during Covid-19 will cause a rise in return on asset while an increase in account payable days (APD) and average inventory days (AID) will have an adverse effect on return on asset

Lastly, the finding from hypothesis three shows that working capital management (account receivable days, account payable days, average inventory days) has significant effect on the profitability of the organization (return on equity) during Covid-19 period. The regression coefficient shows that account receivables days (ARD) is positively associated with return on equity, account payable days (APD) and average inventory days (AID) are negatively associated with return on equity. The implication of this finding is that an increase in account receivable days during Covid-19 will cause a rise in return on equity while an increase in account payable days (APD) and average inventory days (AID) will have an adverse effect on return on equity.

4.3.2 Summary of empirical findings

The study has made attempt to investigate the effect of working capital management on the performance of the manufacturing companies in Nigeria during Covid-19 period, for the period, 2019-2020, the relevant data was extracted from annual reports of the selected manufacturing companies in Nigeria. The tests' result summary indicates that while the account receivables days (ARD) is positively associated with operating profit margin, and return on assets, account payable days (APD) and average inventory days (AID) are negatively associated with operating profit margin , Accounts payable periods and average inventories are negatively related to the firms' return on assets respectively . Consequently the study concludes, based on the various testing outcomes that, working capital management (account receivable days, account payable days, average inventory days) did , significantly affected the performance the listed manufacturing firms in Nigeria during Covid-19 pandemic period.

5. CONCLUSION AND RECOMMENDATION

5.1 Recommendation

In view of the afore narratives, the following recommendation are submitted :

1. Manufacturing enterprises should plan and oversee their operations effectively, correct any variances identified in the financial ratios calculated, and bring them up to standard in order to improve management of each working capital component and therefore increase profitability.
2. Because the world is rapidly moving toward scientific management, where problems are solved even before decisions are taken, rather than relying on poorly constructed models for decision making,

managers of businesses should adopt (and solely rely on) financial principles. This ensures effective working capital management, as well as the firm's liquidity and profitability.

3. In the event of high-cost/high-level inventories, frequent stock taking should be conducted to identify slow-moving stocks (if any) in order to minimize overinvestment in such stocks. Rather than that, rapid stock movers should be acquired or invested in to expedite sales, i.e. inventory conversion to sales and profit margins. Periodic stock taking also assists management in determining the stock levels at regular intervals in order to determine the replenishment, i.e. re-order level. However, the advent of certain software packages has simplified this process. As a result, management should implement a more sophisticated inventory management/control strategy.
4. These organizations should alter their cost of sales in order to generate a sufficient profit, as no business can operate without profit, which is the primary objective of any business organization, private or public. This can be achieved by hiring financial experts to provide expert guidance on working capital management in Nigerian manufacturing firms.

5.2 Contribution to knowledge

This study throws insight into the challenges of the recent covid-19 health crisis for the manufacturing sector and management of their working capital to contain the impact of covid-19 crisis particular. The outcome of this study in the long run, inspires the resilience spirits of financial managers in designing strategies that could weather economic crisis even in the event of similar crisis scenarios. The study while adding to existing literature the study going by the scope and time range of data, presents a novel evaluation in this area of study which addresses health crisis challenges , working capital and corporate performance in Nigeria.

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