International Journal of Academic Management Science Research (IJAMSR)
ISSN: 2643-900X
Vol. 5 Issue 12, December - 2021, Pages:36-44

Effect of Working Capital Management on Productivity of a Manufacturing Companies in South East, Nigeria

Ekwochi, Eucharia Adaeze, PhD[1], Ejim, Emeka Patrick, PhD[2], Agbaji, Benjamin Chuwuma, PhD[3]

[1]Department of Business Administration, Faculty of Management Sciences, Enugu State University of Science and Technology, Enugu, Nigeria.
E-mail: eucharia.ekwochi@esut.edu.ng
[2]Business Administration and Management, School of Business Studies, Institute of Management and Technology and Management, Enugu, Nigeria.
[3]Department of Insurance, Faculty of Management Sciences, Enugu State University of Science and Technology, Enugu, Nigeria.

Abstract: *The study investigated the Effect of Working Capital Management on the productivity of manufacturing Company, Manufacturing companies in the South East States of Nigeria, Innoson Technical and Industrial Company Limited, Chippings in Ebonyi State, Universal Crushing in Imo State, Food Industry in Anambra State was selected as a case study. The specific objectives of the study are to identify the various components of working capital in manufacturing companies in the South East State of Nigeria; evaluate the impact of working capital management on the productivity of manufacturing companies in the South East State of Nigeria. A panel data methodology was used with different regression estimators to analyze this relationship based on a balanced panel of 10 listed firms during the period 2008-2017. It was discovered that cash collection period and cash payment period exerted a negative impact on return on assets, though the impact was only significant for cash payment period on the ground of −0.064 ($p = 0.000 < 0.05$), as against the estimate for cash collection period that stood at −0.032 ($p = 0.077 > 0.05$). Also discovered was that both the current ratio and inventory period exerted a positive impact on return on assets, though the impact was only significant for current ratio on the ground of 8.172 ($p = 0.000 < 0.05$), as against the estimate for inventory period that stood at 0.045 ($p = 0.438 > 0.05$). The study concluded that working capital management affected firms' profitability in Nigeria. Therefore, it was recommended that while the shorter collection was maintained, payment to creditors should not be elongated so as to enjoy cash discount (if any) and that firms should be proactive in the management of raw materials in order to avoid idle resources that might negatively impact their financial performance.*

Keywords: Working Capital, Management, Productivity

Background to the Study

The working capital of a company has a major role in making it productivity or non-profitable. Most of the potential investors and others analyze position statement to evaluate the management of working capital. Net Working capital consists of current assets less Short-term obligations. Positive working capital explain that the corporation is in a fine condition to reimburse its short-term debt whereas negative working capital explain that the most liquid assets of the corporation are not sufficient to fulfill its current monetary commitments. Any finance manager must sustain a most favorable point of investment in the most liquid assets of the company. Working capital for any business is the amount of capital to carry out its daily basis operations. In manufacturing concerns, it is the investment required for the conversion of raw material into ready to sell products for the company. The most important items inside determination of working capital are inventories of the corporation, its accounts receivables and payables. The management of working capital frequently considered a tool to maintaining competence of the business inside their operations. Working capital is often assessed by lenders to judge the financial short term paying back ability in difficult financial periods. The current scarcity of cash and credit is threatening the survival of many businesses in all over the world primarily in Nigeria as its considered the sources of company's working assets and liabilities referred to as working capital, it is a fact that corporations could not exist without working capital and this is undeniable. Eventually, the management of working capital (WCM) necessitates short term decisions in working capital (WC) and financing of all aspects of both firms' short term assets and liabilities. This explains the fact that firms with inadequate working capital are in financial strait jacket. As the name implies, working capital refers to the funds that are required for the day to day running of the activities of a firm, it is the excess of current assets over current liabilities. Working capital management involves the relationship between a firms short term assets and its short term liabilities. The goal of working capital management is to ensure that a firm is able to continue its operations and that it has sufficient ability to satisfy both maturing short-term debt and upcoming operational expenses. The management of working capital involves managing inventories, account payables, account receivables and cash. Large numbers of business failure have been attributed to the inability of financial managers to plan and control the current assets and current liabilities of their respective organizations. This explains why working capital management is vital to firms with limited access to the long term capital market. The working capital measures both a company's efficiencies and its short term financial health. It also gives investors an idea of the companies underlying operational efficiency.

Statement of the Problem

Working capital management is a managerial accounting strategy focusing on maintaining efficient levels of both components of working capital, current assets and current liabilities in respect to each other. Generally speaking, the immediate problem facing most financial managers always centers on the best way to ensure suitable survival of the business as well as its expansion in terms of working capital management. A firm or company should be in a sound working capital position. It should have adequate working capital to run its business operations. One should note that both excessive as well as inadequate working capital position are dangerous to any business, therefore a company is required to maintain a balance between liquidity and productivity which are sometimes conflicting objectives while conducting its day to day activities. The credit policy of a firm is another bottleneck confronting working capital management. A flexible credit policy adopted by the management in most cases results in writing off a high proportion of bad debts while a rigid credit policy reduces the level of sales and also scares away customers. Therefore, financial managers are faced with the problem of determining an effective and efficient credit policy which should be in line with their company's goals and objectives. Fraud is almost in every organization and this is also a big problem to working capital managers since working capital management requires a substantial part of the capital held in liquid cash so as to run the day to day activities of a firm. Financial managers are faced with the task of providing adequate security in order to prevent embezzle of money meant for the organization. Working capital management is mostly important to firms in developing economics because they are faced with many problems such as; low investment, low sales, lack of resources, low level of product and process technology, small market, lack of access to capital, lack of physical infrastructure, production capacity to satisfy demand (because they are small), thereby, making inventory management more crucial. Most of the Nigerian firms do not have access to capital and lack the opportunity of getting the benefit of financial market.

Objectives of the Study

The broad objective of this study is to examine the effect of working capital management on the productivity of manufacturing firm with special reference to Manufacturing companies in the South East State of Nigeria. The specific objectives are to:

1. Identify the various components of working capital in Manufacturing companies in the South East State of Nigeria;
2. Evaluate the impact of working capital management on the productivity of Manufacturing companies in the South East State of Nigeria.

Research Questions

This study intends to provide answers to the following questions;

1. What is the relationship between the stock turnover, accounts payable, liquidity and the Productivity of Manufacturing companies in the South East State of Nigeria.?
2. What is the relationship between accounts receivable and the productivity of Manufacturing companies in the South East State of Nigeria.?

Research Hypotheses

The main purpose of this study is to examine the effect of working capital management on productivity. The components of working capital will form the basis for formulating the hypotheses which will be tested and validated with a view to making some recommendations. Below are the following Null hypotheses:

Ho: There is no significant relationship between stock turnover, accounts payable, liquidity and the Productivity of Manufacturing companies in the South East State of Nigeria.

Ho: There is no significant relationship between accounts receivable and the productivity of Manufacturing companies in the South East State of Nigeria.

Conceptual Framework

The successes of a firm depend ultimately, on its ability to generate cash receipt in excess of disbursement. The cash flow problems of many businesses are exacerbated by poor financial management and in particular the lack of planning cash requirement (Jarvis et al, 2018). The ultimate objective of a firm is to maximize the profit, but preserving liquidity of the firm is also an important objective. The problem is that increasing profit at the cost of liquidity can bring serious problems to the firm. Therefore, there must be trade-off between these two objectives of the firm. One objective should not be at the cost of the other, because both have their importance. If firms do not care about profit, they cannot survive for a longer period. On the other hand, if firms do not care about liquidity, they may face the problem of insolvency or bankruptcy, for these reasons working capital management should be given proper consideration and will ultimately affect the productivity of the firm (Ricci and Vito, 2019).

Current assets

The term current assets are used to designate cash and other asset or resources commonly identified as those which are reasonably expected to be realized in cash or sold or consumed during the normal operating cycle of a business. Thus the term comprehends in general such resources as:

1 Cash available for current operations and items which are the equivalent of cash.

2. Inventories (or stocks) of merchandise, raw material goods in process, finished goods, operating supplies, and ordinary maintenance material and parts.
3. Trade accounts notes and acceptance receivable.
4. Receivable from officers, employees, affiliates, and others, if collectible in the ordinary course of business within a year.

Installment or deferred accounts and notes receivable if they conform generally to normal trade practices and terms within the business.

Marketable securities representing the investment of cash available for current operations and Prepaid expenses such as insurance, interest rents taxes, unused royalties, current paid adverting service not yet receivable and operating supplies.

Non-Current Assets

The items listed below are generally considered as non-current.

Cash and cash claims restricted to use for other than current operations, designated for the acquisition of non – current assets, or segregated for the liquidation of non-current debts. Advance and investment insecurities, whether marketable or not, made for purpose of control, affiliation or other continuing business advantage. Cash surrender value of life insurance policies Land and other natural resources

Current Liabilities

The term current liabilities are used principally to designate obligations whose liquidation is reasonable expected to require the use of existing resource properly classifiable as current assets, or the creation of other current liabilities (Larson, 2018). As a balance sheet category, the classification is intended to include obligation for items which have entered into the operating cycle. Such as payable incurred in the acquisition of material and supplies to be used in the production of goods or in providing services to be offered for sale; collections received in advance of delivery of goods or performance of service, or debts which arise from operations directly related to the operating cycle, such as accruals for wages, salaries, commission, rentals, royalties, and income and other taxes. Other liabilities whose regular and ordinary liquidation is expected to occur within a relatively short period of time, usually twelve months, are also intended for inclusion such as short – term debts arising from the acquisition of capital assets, serial maturities of long – term obligation amounts required to be expended within one year under sinking find provision, and agency obligation arising from the collection or acceptance of cash or other assets for the account of third persons. Current liabilities are, therefore, obligations which would generally require the use of current assets for their discharge or alternatively, the creation of other current liabilities. The following are current liabilities commonly found in practice.

Difficulties in Managing Working Capital

A financial manager spends a lot of time in handing current assets of a firm. This is so because the level of each component of current assets changes continually. For instance, accounts receivable and inventory increase and decrease with the level of sales while payable expand and contrast with the level of purchases. Equally, the level of cash reduces as management uses cash to pay taxes and other bills. Therefore, managers must be up and doing in monitoring each of these changes so as to avoid financial difficulties that could put the company into financial mess and embarrassment. Cooley and Rodin (2018) observed that changes in both current assets and current liabilities relate closely to changes in a firm's selling activity. These changes include changes in inventory, accounts receivable, account payable, cash overdraft, taxes and other bills payable. All these change emanate because in a firms most liquid of all assets, which is cash by analyzing a statement of cash flow. As already stated, a firm uses its liquid asset especially cash to pay its suppliers, employee and creditors, working capital that is synonym for current assets effect a firm's ability to pay short-term maturity obligations. The financial manager in his effort to match the maturities of capital sources with the maturities of their used provides some assurance that a firm will be able to pay its obligations. All these analysis provide a financial manager with tedious talks that are time consuming and energy sapping. In other words, the management of current asset is problematic. (Pandey, 2019). Profit maximization is the ultimate objective of firm as well as protecting liquidity is an important objective too. The difficulty of working capital management is to achieve the two objectives optimally within an operating period if profit increases at the cost of liquidity, this may create serious problem to firms. Therefore, to solve such problem, there must be some compromise between these two objectives of firms. One objective will not achieve at the cost of the other, as both objectives have their own importance to firms. If firm do not care about productivity, they may not survive for a longer period. On the other hand, if firms do not care about liquidity, they may face problem of insolvency or bankruptcy.

Theoretical Review

Operating Cycle theory

To estimate the gross working capital requirements, the understanding of the operating cycle is very important. The function of any trading unit is to procure material, process the same, sell the finished goods and realize money and utilize the money so received, to procure material again and to continue the cycle all over again. Thus the process starts with purchase of materials required for the trading. The process purchase of material may take some time due to the number and nature of material transportation, the material once procured are made to undergo the several processes, the duration of which may range from a day to months. During this period,

International Journal of Academic Management Science Research (IJAMSR)
ISSN: 2643-900X
Vol. 5 Issue 12, December - 2021, Pages:36-44

various material will be in different stages of production in different forms. Besides, the cost of material, labour charges, electricity, water, rent etc are also incurred during the period of processing. All these required funds/capitals once the goods are produced it may not be sold immediately and it may have to be stored in a go down for some days before they are sold. Storing of such finished goods involves cost of materials used in such finished products, labour and other manufacturing expresses incurred in producing them. It is not necessary that all the goods will be in cash.

The Importance of Operation Cycle Theory

Operating Cycle is important because it determines the amount of working capital a business need. If you can have the operating cycle, you will have the working capital requirement of the business. If the turnover period for inventories and account receivable lengthen, or the payment period to account payable shortens, then the operating cycle will lengthen and the investment in working capital will increase (Ghosh et al 2018).

Empirical Review

Many previous researchers have indicated working capital management and corporate productivity of firms in different countries and environments. Samiloglu and Demirqunes (2017) analyze the effect of working capital management on firm productivity. In accordance with the aim, they considered between firm productivity and the components of statistically significant relationship between firm productivity and the components of cash conversion cycle at length, a sample consisting of Istanbul stock exchange (ISE) listed manufacturing firm for the period of 1998 – 2007 has been analyzed under a multiple regression model. Empirical finding of the study showed that accounts receivable period inventory period and leverage affect firm productivity negatively while growth (in sales) affects productivity positively. Sharma and Kumar (2019) examine the effect of working capital on productivity of India firm. They collected data about a sample of 263 non-financial BSE 500 firms listed at the Bombay Stock Exchange (BSE) from 2000 to 2008 and evaluated the data using ordinary least square (OLS) multiple regression. The finding of their study significantly depart from the various international, studies conducted in different markets. The result revealed that working capital management and productivity was positively correlated in Indian companies. The study further revealed that inventory number of days and number of day's accounts receivable and cash conversion – period exhibit a positive relationship with corporate productivity.

Adina (2019) states in his paper working capital management and productivity: A case of Alba county companies that the purpose of his study was to analyze the efficiency of working capital management from Alba County. He examined the relationship between the efficiency of the working capital management and productivity using person correlation analyses and using a sample of 20 annual financial statement of companies covering period 2004 – 2008. He concluded that there was a weak negative linear correlation between working capital management indicator and productivity rates. Karaduman, et al (2018), examines the empirical relationship between efficiency of working capital management and corporate productivity of selected companied in the Istanbul stock exchange for the period of 2005 – 2009. The panel data methods were employed in order to analyze the mentioned relationship. The cash conversion cycle (CCC) was used as a measure of working capital management efficiency, and return on assets (ROA) used as a measure of productivity. He found out that reducing cash conversion circle (CCC) positively affects return on assets. Charitou, et al (2019) in their study empirically investigate the effect of working capital management on firm's financial performance in an emerging market. They hypothesized that working capital management leads to improved productivity. Their data set consists of firms listed in the Cyprus Stock exchange for the Period 1998-2007. Using multivariate regression analysis, their results supported their hypotheses. Specifically, their results indicated that the cash conversion cycle and all its major components namely, days in inventory, days in sales outstanding and creditor's payment-period were associated with the firms' productivity. They opined that the results of this study should be of great importance to managers and major stakeholders, such as investors, creditors and financial analysts, especially after the recent global financial crisis and the latest collapse of giant organizations worldwide.

Gap in the Review of Related Literature

Several studies have been conducted on the effect of working capital management on the productivity of manufacturing companies in South East, Nigeria. But there is a lack of literature on the constructs/proxies used in this study: Account Receivable, Account payable, Inventories, Cash conversion cycle, Return on total assets and liquidity.

Methodology

Research Design

Since there are so many types of research design, the one that was used in this study is the ex-post facto research design. This is because, according to Onwumere, (2019), it involves events that have already taken place in the past. The records that were observed are from 2000-2011 a period of twelve years. The variables that will be tested in the studied firms are accounts receivable, accounts payable, inventories, cash conversion cycle, Return on total assets and liquidity. The study will cover the period 2000-2011.

Presentation, Analysis and Interpretation of Data Distribution

Test of Hypothesis

Table 1: Multiple Regression Analysis showing the relationship between productivity ratio and AR, STO, AP, CCC, LQ, DT and SL of Manufacturing companies in the South East State of Nigeria.

Variables	Linear Regression	Semi Log Regression	Double Log Regression	Exponential Regression
Constant	0.087	-0.068	1.065	0.132
	(0.675)	(-0.589)	(2.441)	(0.116)
Accounts	0.001	-0.039	3.418	6.147
Receivable Ratio (AR)	(0.004)	(-1.023)	(4.619)	(0.831)
Stock Turnover	0.177	-0.050	-2.055	0.969
Ratio (STO)	(0.698)	(-0.729)	(-3.023)	(0.195)
Accounts Payable	-0.106	-0.059	-1.606	-2.318
Ratio (AP)	(-0.869)	(-1.493)	(-2.622)	(-0.581)
Cash Conversion	-0.068	0.013	-0.101	0.938
Cycle Ratio (CCC)	(-0.869)	(0.289)	(-0.394)	(-0.340)
Liquidity Ratio (LQ)	-0.002	-0.142	-1.507	-1.040
	(-0.016)	(-0.509)	(-3.376)	(-1.813)
Debt Ratio (DT)	-0.103	-0.018	-0.570	4.413
(Control)	(-1.180)	(-0.675)	(-2.403)	(0.776)
Sales Growth Rate	0.001	0.023	-1.291	-0.010
(SL) (Control)	(0.459)	(0.660)	(-5.273)	(-1.161)
R^2	0.628	0.722	0.952	0.562
Adjusted R^2	-0.022	0.234	0.868	-205
F-Ratio	0.966	1.481	11.373	0.733

NB*: 1. Productivity=Bo + Bi (AR)ii + Bi(STO)ii+ Bi(AP)ii+ Bi(CCC)ii + Bi(LQ)ii + B2DT(control)2i +B2SL(control)2i + U*i

2. Also, 1%, 5%, 10% levels of significance are represented by; and respectively
Values in brackets are coefficients while those outside brackets are t-values of the variables
DT and SL are not considered in the interpretation because they are controls variables

The results of multiple regression analysis for the variable influencing the productivity ratio of Companies in the South East Nigeria were summarized in Table 4.4.2 above. From the results presented above and out of the four functional models of the multiple regression calculated, the double log Regression model was chosen because it has the highest number of significant variables as well as a very significant F-ratio (11.373) value which indicated that the choice model fitted the analysis. Furthermore, the results of the analysis revealed an R^2 value of 0.952 thus indicating that 95.2% variation in the productivity ratio (dependent variable) of Manufacturing companies in the South East States of Nigeria was accounted for by the explanatory (independent) variables considered in the analysis. Specifically, the results showed that STO, AP and LQ had significant negative relationships with the industries' productivity ratio at 1% level of significance. This implies that a unit increase in the variables shall bring about corresponding decrease in the productivity ratio of Manufacturing companies in the South East State of Nigeria On the other hand, the company's AR had significant and positive relationships with the productivity ratio at 1% levels of significance. This means that unit increases in the variable shall bring about corresponding increase in the productivity ratio of the company in Nigeria. However, CCC had negative but non-significant relationship with the company's productivity ratio.

ISSN: 2643-900X
Vol. 5 Issue 12, December - 2021, Pages:36-44

Test of hypothesis two

Descriptive statistics.

	ROA	CCP	CRA	IVP	CPP
Mean	10.47960	56.01828	1.275657	16.67586	40.64646
Median	9.010000	53.23000	1.120000	6.810000	22.00000
Maximum	45.73000	280.4800	3.240000	137.5000	395.0000
Minimum	-21.44	0.000000	0.000000	0.000000	0.000000
Std. Dev.	9.821586	47.51895	0.609699	29.72000	61.96367
Skewness	0.673755	2.339953	0.826958	2.887342	3.619244
Kurtosis	5.770819	11.02555	3.784519	9.942634	17.26857

Where ROA is Return on Assets, CCP is Cash Collection Period, CCP is Cash Payment Period and CRA is Current Ratio and IVP is Inventory Policy.

Correlation matrix.

Variables	ROA	CCP	CRA	IVP	CPP
ROA	1.000000				
CCP	-0.13964	1.000000			
CRA	0.118498	0.288767	1.000000		
IVP	0.230808	0.224887	0.304355	1.000000	
CPP	-0.36252	0.244601	-0.03231	-0.16973	1.000000

Where: ROA is Return on Assets, CCP is Cash Collection Period, CPP is Cash Payment Period and CRA is Current Ratio and IVP is Inventory Policy.

Summary of Findings

1. Effect of working capital has a significant and negative effect on production output in companies in south east Nigeria – 0.064(p=0.000<0.05)
2. Effect of working capital has significant and positive effect on sales turnover in companies in south east Nigeria 8.172(p=0.000<0.05)

Conclusion

The importance of efficient working capital management (WCM) is indisputable. Moreover, adequate WCM is essential as it has a direct impact on the productivity of firms. An attempt has been made in the present study to examine the relationship between working capital management and corporate productivity of manufacturing company (Manufacturing companies in the South East State of Nigeria), from the period 2000 to 2011. Some promising investments with high rate of returns had turned out to be failures and were frustrated out of business. Many companies had been either temporarily or completely shot down, while many Nigerian workers had been forcefully thrown into unemployment market, even when the companies are listed in the Nigerian stock exchange. Despite the fact that working capital management are presumed to be vital for company's survival there is still relatively little known about the way companies actually manage their working capital for negative or positive influence on their productivity. This study aims at understanding the working capital management of manufacturing companies, how the variables interrelate, and the extent to which these identified variables impact on firm productivity. Our studies focus on working capital of manufacturing companies in the South East State of Nigeria. using carefully chosen qualitative research methodology. Empirical data were gathered through the annual reports and statement of accounts of the selected company and the Nigerian stock Exchange fact-book 2000-2011. The results indicate that accounts payable ratio has negative and significant relationship with the company's productivity. On the other hands, accounts receivable ratio had positive and significant relationship, while ratio had positive but non-significant relationship with firm's productivity. Stock turnover ratio and liquidity ratio had negative and significant relationship with the company's productivity. Generally, working capital management has negative significant relationship on firms' productivity in Nigerian manufacturing firms.

Recommendations

Based on the findings of this study, we made the following recommendations:

a. There should be a balance between liquidity and productivity. This is because the rate of liquidity in the company under study was low. The manager of this company should make sure that they attach more importance to cash, so that at every point in time, they can have enough cash to settle their financial obligations.
b. There should be more carefulness in handling of stocks/inventories. The company should make every effort to have enough stocks so that they would not experience stock-outs. In as much as it is good to make sales, it is also not encouraging to sell everything to avoid stock-outs which may creep in, if there are regular huge sales as can be seen in all the companies under study.

References

Abdul and Nasr (2018). Working Capital and Productivity-a Case Study of Pakistani Firms, International review of business research papers vol.3, no 1 march.

Abdul, R. and Mohamed, N. (2018). Working capital management productivity. Case of Pakistani firms. International Review of Business Research paper, 3, (1), 279 -300.

Aborede, R., (2018). Strategic Financial Management. Shomolu, Lagos master stroke Consulting Ltd.

Adina, E.D. (2018). Working capital management and productivity: A case of Alba county companies (12), 1-36.

Afza, T. and Nazir, M.S. (2019). Working capital management practices of capital management practices of firms. Empirical evidence from Pakistan in the proceeding of 9th South East Asian management forum (SAMF) held on February 24-25, 334 – 343, North South university Dhaka, Bangladesh.

Alshubiri, E.N. (2020). The effect of working capital practices on risk management Evidence from Jordan. Global Journal of business research, 5, (1), 39 – 5 4

Amit, K. Mallik, D.S. and Debdas, R. (2019). Working capital and productivity. A study on their relationship with reference to selected companies in Indian Pharmaceutical industry. GITMAN Journal of management, 3 (2), 51 – 62.

Anup, C. (2018). Working capital management practiced in Pharmaceutical companies listed in Dhaka stock exchange, Brac University Journal, IV (2), 75-86.

Ashraf C.K. (2019). The relationship between working capital efficiency and productivity, Advances in management, 5.(12) 59 – 74.

Assets of Nigerian companies: A comparative study of then selected companies, Journal of research in National development, 8, (1),

Bhaskarand Khamrai, (2019). Relationship Between Working Capital Management and Productivity; A Case Study of Selected FMCG Companies in India, Business and Economic Journal vol. 2020:BEJ-60

Bhunia, A. (2018). Liquidity management of public sector iron and steel Enterprise in India. Vidyasager University Journal of commerce, 12.

Bieniasz, A. and Golas, Z. (2019). The influence of working capital management on the food industry. Enterprises productivity, University of life science, Department of economics and social sciences Poland 5, (4), 68 – 81.

Brealey R. and Myers, S. (2018). Principles of Corporate Finance Washington. McGraw – Hill.

Brennan, M.V. Makisimovic and Zechner J, (2019), Vendor financing, Journal of finance, 18. 1127 – 1141.

Charitou. M.S. Elfani, M. Lois, P. (2018). The effect of marking capital management on firm’s productivity: Empirical Evidence from an Emerging market, Journal of Business and economic Research, 8, (12)

Chetwynd, A., (2020). Working Capital Management. California: Santa Monica Publishers.

Ching, H.Y. Novazzi, A. and Gerab, F. (2019). Relationship between working capital management and productivity in Brazilian listed companies. Journal of global Business and Economics, 3, 75.

Deloof, M. (2019). Does working capital management affect productivity of Belgian firm. Journal of Business finance and Accounting. 30, (3 and 4), 573-587.

Dong, H.P. and Jyl, T.S. (2019). The relationship between working capital management and productivity. A Vieentnam case international Research Journal of finance and Economics, Eno Journal publishing 49, 59–67.

Ejelly A.M.A. (2019). Liquidity-productivity tradeoff. An empirical investigation in Emerging market. International Journal of commerce and management. 14, (2), 48-61.

Ejelly, and Abuzar, M. A. (2020). Liquidity productivity Tradeoff. An empirical investigation in an emerging market, international Journal of commerce and management, Vol. 14, (2), 48-61.

Elikwu, M., (2018).Research Project Made Easy: A Simplified Approach to Write & defend AGood Research Report. Lagos: Cm-Eight Publishers.

Enyi, E.P. (2019). Applying relative solvency to working capital management. The lcfai University press.

Falope, O. I. and Ajilore, O.T. (2019). Working capital management and corporate productivity Evidence from panel Data Analysis of selected Quoted companies in Nigeria, research Journal of business management, 3, 73 – 84.

Ganesu, V. (2018). An analysis of working capital management efficiency in telecommunication equipment industry. Review Academic journal, 3, (2), 1-9.

Garcia – Teruel, Pedro, J. and Pedro, M. Solano, (2018). Effects of working capital management on SME productivity. international Journal of managerial Finance, 3, (2), 164-177.

Gentry J.A, Vaidly anathan, Lee r, and Wai, H. (2018). A weighted casd conversion cycle. Financial management, 19 (1), 90-99.

Ghosh, S.K and Maji, S.G (2019). Working capital management Efficiency. A study on the Indian cement Industry Management accountant, 39, (5), 363 – 373.

Gill, A. Biger, N. and Atnur, (2018). The relationship between working capital, management and productivity Evidence from the United State, Business and Economic Journal, 2020, Bej – 10, 1-9

Gitman, L.J. (2019). Principle of management finance (12th edition Boston Pearson Prentice Hall.

Hill, N.C. and Sartoris, W.L. (2018). Short-term financial management text and cases (2nd edition), New York, Maxwell Macmillan international.

Howorth, C.P. (2019). The focus of working capital management in Uk small firms" management accounting research, research 14, 97-111, Blackwell publishing.

Hsiao, C. and Jahmisioglu, A.K. (2018). A panel Analysis of liquidity constraints and firm investment. Journal of American statistical Association, 92 (438), 455-465.

Ifeh, G.O., (2019). Working Capital: A tool for cost Reduction and Improvement in Productivity(A study of Nigeria Breweries PLC.) Enugu , Nigeria, Online, Assessed 8th September, 2018

Irfan, A. (2019). Impact of working capital management on performance proceedings of 2nd international conference on Business Management Sargodha Pakistan.

Karaduman, H.A. Aknas, H.E. Caliskan, A.O. and Durer, S. (2019). The relationship between working capital management and productivity: Evidence from and Emerging market, International research Journal of Finance and Economics, 62, 61 – 67.

Karaduman, et al. (2018). The effect of working capital management the productivity of Nigeria manufacturing firms. Journal of business economics and management, 14, (3).

Kim, C.S. Mauer, D.L. and Sherman, (2018). The determinants of corporate liquidity. Theory and Evidence Journal of financial and quantitative Analysis 33 (3).

Lamberson, M. (2019). Changes in working capital of small firms in relation to changes in Economic activity. Journal of Business, 10, (2), 45-50.

Larson, K.D. (2020). Fundamental Accounting Principles 12th edition, Boston: Richard Irwin

Lazaridisi, I. and Trynidis, D. (2020). Relationship between working capital management and productivity of listed companies in the Athens stock exchange", Journal if financial management and Analysis, 19, (1), 26-35.

Lyroadi, and Lazadis, (2019). Short term financial management of business increases and in Cyprus Business and Economic society international.

Mathuva, D. (2019). The Influence of working capital management components on corporate productivity. A. survey of Kenyan listed firms Research Journal of Business management, 3, 1 11.

MeCarty, D. and Lyroudi, K. (2018). An Empirical investigation of the cash conversion cycle of small business firms. The Journal of small business finance 2, 139 – 16 1.

Mechar, A. (2019). Impact of Equity Financing on Liquidity position of a firms. Applied financial Economics 15, 425-438

Michael, I. S. Malitz, B.L. and Ravid, S. (2018). Trade credit quality guarantees product marketability. Financial management 22: 117-127.

Michael, N.B., (2019). Working Capital Management Efficiency and Corporate Productivity; Evidence from Quoted firms in Nigeria, Journal of Applied Finance and Banking, vol 2, 215-237

Mohammad, R.(2019). Working capital management and corporate productivity, Evidence from Iran. World applied science journal,12,(7),1093-1099.

Muchinas, and Kiano, E. (2018), Influence of working capital management on firm'sproductivity: A case SMES in Kenya, International Business management, 5, (5), 279 – 286.

Mukhopadhay, D. (2019). Working capital management in Heavy Engineering firms. A case study – British Library Direct, 39, 317-323.

Nazir, Main, S. and Afza, T. (2019). Working capital requirement and the determining factors in Pakistan. Journal of applied finance, 15, (4),28–3

Noreen, U. Khan, S.K. and Abbas, Q. (2019). International working capital practices in Pakistan, International Research Journal of finance and Economics, (32), 1-11.

Nwankwo, O. and Osho, S. (2019). An Empirical Analysis of corporate survival and growth. Evidence from efficient working capital management international Journal of Silolary Academic Intellectual Diversity, 12, (1) 1 – 13.

Padachi, K. (2019). Trends in working capital management and its impact on firm's performance: An analysis of Mauritian small manufacturing firms. International review of business research papers. 2, (2), 45 – 58.

Petersen, M.A. and Rajan, R.G. (2018). Trade credits: Theory and Evidence" Review of financial studies, 10, (3), 661-691.

Raheman, A. and Nasr, M. (2019). Working capital management and productivity, case of Pakistani firms. International review of business research papers, 3, (1), 279-300.

Rechards, W.L. Hills, W.E. & Tealiberg, J.G. (2020). A cash conversion cycle approach to liquidity analysis. Financial management, 9 (1), 32-38.

Ricci, C. and Viho, N.D. (2019). International working capital practices in the U.K, European financial management, 6, (1), 69-84.

Ross et al (2019). Essential of corporate finance. Illionois, irroin Mc. Graw- Hill.

Salandeen, L. (2018). The Nations, September, 2020.

Sammiloglu, F. and Demirgunes, (2018). The effect of working capital management on firm's productivity. Evidence from turkey, the international Journal of Applied Economic and finance (2), 44-50

Schilling, & Geoge, (2018). Working capital Role in Maintaining corporate liquidity. TMA Journal 16, (5),4-7.

Sharma, A.K. and Kumar, S. (2019). The effect or working capital management of firm's productivity: Empirical Evidence from India, Global business Review, 12, (1), 159 – 173.

Shin, H.H. and Soenen, L. (2018). Efficiency of working capital and corporate productivity. Financial practice and Education,8, (2), 37-45.

Singh, J.P. and Pandey, S. (2018). Impact of working capital management in the productivity of Hindalco industries limited. 1efai University Journal of financial Economics 6 (4) 62 – 72.

Singh, P. (2018). lwrentory and working capital Management: An Empirical Analysis, the Icfai University Journal of accounting Research Vol. 35.

Smith, M.B. and Begemann, E. (2019). Measuring Association between working capital and return on investment. South Africa Journal of business management. 28, (1), 1-5.

Stewart, G. (2020). Supply chain performance Benchmarking Study reveals keys to supply chain Excellence. Logistics information management, 8, (2), 38-45.