WORKING CAPITAL MANAGEMENT AND PROFITABILITY OF SELECTED QUOTED FOOD AND BEVERAGES MANUFACTURING FIRMS IN NIGERIA

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ABSTRACT: The main objective of this research was to investigate the relationship between working capital management and profitability of food and beverages manufacturing firms listed on the Nigerian Stock Exchange. The study used secondary data of 120 firm-year observations between 2002 and 2011. Survey research design was adopted. The data were analysed using Descriptive Statistics, Correlation Analysis and Multiple Regression Analysis. The variables for this study were categorized into three: Dependent variables (Net Operating Profit), independent variables (Working Capital Management), and control variables. The study found that there is relatively strong positive and significant relationship between Working Capital management and Net Operating Profit and that a positive but insignificant relationship exist between Cash Conversion Cycle and Net Operating Profit. Also, Account Collection Period has significant negative relationship with Net Operating Profit while Inventory conversion Period and Account payment period have insignificant negative relationship with Net operating profit of food and beverages manufacturing companies in Nigeria.

KEYWORDS: Correlation Analysis, Working Capital Management, Net Operating Profit, Cash Conversion Cycle, Quoted Food and Beverages Firms.

INTRODUCTION

The global economic meltdown has affected the profitability of many listed firms on the Nigerian Stock Exchange. Many foods and beverages manufacturing firms are just struggling to survive in the Nigerian capital market. The unfriendly operating environment, in which many manufacturing firms have found themselves, is really hindering their profit making efforts.

The importance of working capital management in a business enterprise cannot be underplayed. Management of working capital is central to the growth and survival of any business. Working capital is as inevitable in business as blood is in human body (Umara, Sabeen, and Qaisar, 2009). The need for maintaining adequate working capital is imperative. Just as circulation of blood is very necessary in the human body to maintain life, the flow of funds is very necessary to maintain business. If it becomes weak, the business can hardly prosper or survive (ALSshubiri, 2011). Working capital is what makes business to run effectively and efficiently. Business organizations need to give proper attention to the management of their working capital.

The going concern ability of an organization is greatly anchored on the continued solvency of that organization (Enyi, 2011). Working capital management is important for creating wealth for shareholders (Amarjit, Nahum and Mathur, 2010).
The concept of working capital management has been in existence for years and many researches have been carried out in this field. Earlier contributors to the study of working capital management and firm performance among others are: (Shin and Soenen, 1998; Deloof, 2003). The field of working capital management is given attention by researchers because of its continued relevance and centrality to the success of a going concern. To corroborate this assertion, Enyi (2011) asserts that a business is as strong as its unencumbered capital base, as liquid as its working capital volume, and as dynamic and viable as its managerial decisions, working capital is the centre of existence of any business. In effect, without working capital, business cannot operate successfully (NorEdi and Noriza, 2010).

Padachi (2006) identifies internal and external factors as major determinants of success or failure of any firm. According to him, external factors include: availability of attractive financing, economic conditions, competition, government regulations, technology and environmental factors. On the other hand, internal factors include: managerial skills, workforce, accounting systems and financial management practices. As identified above, topmost in the list of the problems facing Nigerian manufacturing firms especially food and beverages firms are: poor management of working capital and unfriendly operating environment. A large number of business failures in the past were attributed to the inability of financial managers to properly plan and control the working capital of their respective firms. Inefficient working capital management in the face of economic and political crises in Nigerian businesses today has led to loss of profit; owing to high bad debts, over/under stocking; liquidity problem; inability to expand; financial losses; vulnerability to liquidation and insolvency (Egbide, 2009; Nwankwo and Osho, 2010). In spite of the apparent growth in food and beverages manufacturing industry in Nigeria today, there is little research on working capital management and profitability in this sector. The main objective of this research is to investigate the relationship between working capital management and profitability of food and beverages manufacturing firms listed on the Nigerian Stock Exchange.

LITERATURE REVIEW

In the opinion of Singh and Asress (2011), a well-designed and effective working capital management has a significant contribution on profitability and liquidity position of firms. According to Valipour and Moradi (2012) by efficient working capital management, companies can minimize their dependency on external source of finance, and they can use internally generated funds for future investments. Inefficient working capital management may result to over-investment or under-investment in working capital which will eventually reduce the profitability of the firm. Under-investment in working capital can lead a firm to financial difficulty and eventually put the firm at risk of insolvency.

In the opinion of Nwankwo and Osho (2010), efficient working capital management involves the proper combination of current assets and current liabilities of the business in order to keep the business going with less waste especially in terms of time, energy and goodwill. Efficiency in the management of working capital will no doubt help in creating wealth for the shareholders. Creation of wealth for shareholders is a major objective of business existence. In his work, Bellouma (2010) states that one of the best ways to ensure value creation is developing an efficient working capital management. He further states that the management of working capital is crucial for short-run corporate solvency and survival because it allows the company to use the hidden cash and to limit working capital requirement. Conclusively, efficient working capital management as put forward by (Nwankwo and Osho, 2010) determines the sales, profitability and likelihood of growth and continuity in business.
Cash conversion cycle is a popular measure of working capital management. It indicates the firm's ability to convert its resources into cash. It is the time in which the firm's cash is tied up in operations and unavailable for other activities. The advantage of cash conversion cycle (CCC) is that it helps to evaluate changes in working capital. There are three components of cash conversion cycle, they are: receivables, inventories, and payables. Each of these components is to be monitored and controlled properly in order to ensure efficiency in working capital management. The shorter the cash conversion cycle (CCC), the faster to recover cash from sales of finished products and the more cash will be available for use in the business. A high cash conversion cycle implies longer time to recover cash. If this situation arises, then the business may be ready to face liquidity problem.

In previous works as reviewed in this study, it was found that Cash Conversion Cycle (CCC) was used as a major proxy for working capital management. This is not unconnected with the fact that cash conversion cycle is the most appropriate variable for measuring working capital management because it considers all components of working capital which are account receivables, inventory, and account payables together. In their opinion, Falope and Ajilore (2009) refer to cash conversion cycle (CCC) as time interval between the cash outlays that arise during the production of output and the cash inflows that result from the sale of the output and the collection of the accounts receivable. So cash conversion cycle is a circle that revolves round continually so long as the business is in operation. The point of attention is the length of time between when a firm makes payment and when firm receives cash inflow. The shorter the time, the better it is for the firm.

Cash conversion cycle which can also be referred to as cash conversion period connotes the number of days it takes for the firm to collect the proceeds of sales, measured from when the actual payment for inventory was made (Uremadu, Egbide and Enyi (2012). How cash conversion cycle is managed will determine its profitability and continued existence. Amarjit et al, (2010) posit that managers can create profits for their companies by handling correctly the cash conversion cycle. However, a profitable business may fail, if it does not have adequate cash flow (shorter cash conversion cycle) to meet its current obligations and this may force firms to close-down (Singh and Asress, 2011)

EMPIRICAL STUDY

It has been established empirically that cash conversion cycle (CCC) has significant negative relationship with profitability. This is evidenced in the works of (Zariyawati, Annuar, and Abdul-Rahim, 2009; Egbide, 2009; Falope and Ajilore, 2009; Raheman, Afza, Qayyum and Bodla, 2010; Huynh and Jyh-tay, 2010; NorEdi and Noriza, 2010; Mathuva, 2010; Uremadu, Egbide, and Enyi, 2012; Uwuigbe, Uwalomwa and Egbide, 2012; Ogundipe, Idowu, and Ogundipe, 2012). Similarly, Raheman et al. (2010), in their study found negative relationship between net trade cycle and profitability. However, contrary to these findings, the studies conducted by (Amarjit et al. 2010; and Akinlo, 2011) found that there is positive relationship between cash conversion cycle (CCC) and profitability.

From the above findings, it is discovered that largest percentage of previous researches revealed a negative relationship between cash conversion cycle (CCC) and profitability, despite the different proxies used to measure profitability. Thus, it could be concluded that irrespective of the proxies used for profitability, there is a negative relationship between cash conversion
cycle (CCC) and profitability because the shorter the cash conversion cycle, the greater the profit made if properly managed. However, the positive relationship found by Amarjit et al (2010) may be due to the relatively stable and developed economy in which the research was done, while that of Akinlo (2011) may be associated with the kind of methodology used, which is completely different from what other researchers had used in this field.

In the studies carried out by (Egbide, 2009; Falope and Ajilore, 2009; Raheman et al., 2010; Huynh and Jyh-tay, 2010; Amarjit et al., 2010; Mathuva, 2010), it was found that negative relationship exists between Debtor’s collection period and profitability. On the contrary, the studies conducted by (Akinlo, 2011; and Uremadu et al., 2012) revealed that debtors collection period has positive relationship with profitability. Therefore, it is inferred from the above that the early the receivables are collected, the better for the company because early collection of debts would make cash available and in turn increase turnovers and this will eventually increase the profit, provided operating expenses are properly controlled.

However, in a developing economy like Nigeria where there is difficulty in accessing finance, firms may have to increase the average days in which debts are collected in order to retain their customers and keep them loyal. This may be one of the reasons why (Akinlo, 2011; and Uremadu et al., 2012) found a positive relationship between Debtors collection period and profitability. The danger in having long debtors’ collection period is that it leads to high bad debts. As much as possible, high bad debts should not be allowed in the management of working capital management because it may lead to liquidity problems which may lead to the total collapse of the business.

It was found out in the works of (Mathuva, 2010; Akinlo, 2011; and Uremadu et al., 2012) that there is a positive relationship between inventory conversion period and profitability. On the other hand, the works of (Egbide, 2009; Falope and Ajilore, 2009; Raheman et al., 2010; and Huynh and Jyh-tay, 2010) found that there is a negative relationship between inventory conversion period and profitability. However, in the work of Amarji et al. (2010) it was concluded that number of days inventory is held has no significant relationship with profitability. Inventory in manufacturing firms is inevitable, and it must be properly managed. The number of days it takes a firm to turnover its stocks is germane to its success. Ideally, the shorter a firm’s inventory conversion period, the more profit the firm makes because short inventory conversion period will lead to high turnover which will eventually lead to high profit. In a firm where there is positive relationship between inventory conversion period and profitability, there is possibility of having idle stock which will eventually have negative effect on the firm’s profitability.

Empirically, it was established that creditors payment period has significant negative relationship with profitability (Egbide, 2009; Falope and Ajilore, 2009; Raheman et al., 2010; Akinlo, 2011; Uremadu et al., 2012). Contrary to this finding (Mathuva, 2010; and Huynh and Jyh-tay, 2010) found positive relationship between account payment period and profitability. Finally, Amarji et al (2010) found no significant relationship between account payment period and profitability. Looking at the different findings by various scholars as stated above, it can be deduced that the different volume of data and the different geographical areas in which these researches have been carried out is responsible for the difference in findings. However, Account payment period and profitability should have a positive relationship especially in a volatile economy like Nigeria. This is premised on the fact that if a firm is allowed a considerable long account payment period, the more the profit it will make because there will
be enough cash to trade with. A firm having a short account/creditors’ payment period may likely experience liquidity problem.

The outcomes of the studies carried out by (Nazir and Afza, 2009; ALShubiri, 2011; Palani and Mohideen, 2012) in Pakistan, Jordan, and India respectively show that aggressive investment policy (ratio of current assets to total assets) has significant negative relationship with profitability. However, the result of the researches conducted in Pakistan and Malaysia by (Raheman et al., 2010; and NorEdi and Noriza, 2010) respectively revealed significant positive relationship between aggressive investment policy and profitability. Finally, Ogundipe et al. (2012) concluded from the study carried out in Nigeria, that aggressive investment policy has no significant relationship with profitability. As it can be seen from above, these findings came into being through researches carried out in different geographical regions and economies. This may not be unconnected with the different outcomes of their studies. However, the relationship between Aggressive investment in working capital and firm profitability should be positive, all things being equal.

METHODOLOGY

This study was conducted in Nigerian food and beverages manufacturing firms listed on the Nigerian Stock Exchange for period of ten years covering 2002 to 2011 for twelve different companies. The total number of annual reports and accounts from the chosen 12 Food and Beverages firms for 10 years was 120 firm-years observations, that is, a list of 120 annual reports and accounts from the 12 firms for 10 years made up the sampling units. This study made use of secondary data which were collected from published financial statements of the various food and beverages manufacturing Companies in Nigeria, as obtained from Nigerian Stock Exchange and the concerned firms. Data on real gross domestic product (GDP) growth in Nigeria was collected from Central Bank of Nigeria Statistical Bulletin. Source and accuracy of data collected are important in research. Previous researchers such as Falope and Ajilore, 2009; ALShubiri, 2009;Mathuva,2010; and Akinlo, 2011), on working capital management and firm’s performance had equally made use of secondary data because of the reliability of such data.

The data collected for this study were analyzed using Descriptive statistics; to know the characteristics of the secondary data, Pearson product moment correlation; to know the relationship among the variables and multiple regression analysis (OLS) with the aid of statistical package for social sciences (SPSS).

The variables for this study were categorized into three: Dependent variables, independent variables, and control variables. The main dependent variable for this study was firm’s profitability which had its proxy as Net operating profit (NOP). On the other hand, the independent variable for this study was working capital management which had its proxies as Account collection period (ACP), Inventory conversion period (ICP), Account payment period (APP), Cash conversion cycle (CCC), and Aggressive investment policy (AIP). Control variables which served as opposite checks for independent variables as used in this study were: Aggressive financing policy (AFP), current ratio (CR), leverage (LEV), sales growth (NLS), and growth in gross domestic product (GDPGrow).
Functioning Model for the Study
The functioning model for this study is stated as:

Working Model for the Study is:
\[ NOP = \alpha + \beta_1 ACP_{it} + \beta_2 ICP_{it} + \beta_3 APP_{it} + \beta_4 CCC_{it} + \beta_5 AIP_{it} + \beta_6 AFP_{it} + \beta_7 CR_{it} + \beta_8 NLS_{it} + \beta_9 LEV_{it} + \beta_10 GDPGrw_{it} + \epsilon_{it} \]

Where:
\( NOP_{it} \) = Net operating profit of firm i for time period t
\( ACP_{it} \) = Accounts collection period of firm i for time period t
\( ICP_{it} \) = Inventory conversion period of firm i for time period t
\( APP_{it} \) = Accounts payment period of firm i for time period t
\( CCC_{it} \) = Cash conversion cycle of firm i for time period t
\( AIP_{it} \) = Aggressive investment policy of firm i for time period t
\( AFP_{it} \) = Aggressive financing policy of firm i for time period t
\( CR_{it} \) = Current ratio of firm i for time period t
\( LEV_{it} \) = Leverage ratio of firm i for time period t
\( NLS_{it} \) = Natural logarithm of firm i for time period t
\( GDPGrw_{it} \) = Gross domestic product growth of firm i for time period t

DATA ANALYSIS AND DISCUSSION OF FINDINGS

Trend Analysis of the Data
The range of Net Operating Profit (NOP) for the food and beverages manufacturing firms in Nigeria for the period of 2002 to 2011 was ₦772.99 with the minimum value of ₦239.56 and maximum value of ₦533.43. The average value of NOP over the years was ₦219.995, this shows that the firms in this sector have been making profit over the years. The deviation of data from the mean was 135.36795 which means majority of the data cluster around this value, and the variance was 18324.482. NOP data was negatively skewed and low with statistical value -0.023 (i.e. the distribution of the data tends towards a negative direction with most of the data being less than the mean), with standard error of 0.220. The kurtosis value which was used to measure the degree of steepness of a distribution for NOP was 0.649. Using percentile coefficient of kurtosis, the distribution is leptokurtic because the value is more than 0.263 (Adesoye and Maku, 2013) with standard error 0.438.
The table shows correlation results between Profitability (measured by NOP) and working capital management (measured by ACP, ICP, APP, CCC, AIP, AFP, CR, NLS, LEV and GDPGROW). The correlation coefficient between NOP and ACP is -0.505 which shows that NOP has a negative and significant relationship with ACP at 0.01 level. The value of correlation coefficient between NOP and ICP is -0.096 which shows that ICP has a negative relationship with NOP but the relationship is not significant at either 0.01 level or 0.05. The correlation coefficient between APP and NOP is -0.212, this implies a significant negative relationship at 0.05 level.

The correlation coefficient between CCC and NOP is 0.155, this implies that there is a positive but insignificant relationship between Cash Conversion Cycle and Net Operating Profit of food and beverages manufacturing companies in Nigeria. The correlation co-efficient between NOP and AIP i.e. 0.166 suggests there is an evidence of positive relationship between Net Operating Profit and Aggressive Investment Policy of quoted food and beverages manufacturing companies in Nigeria, but the relationship insignificant. Based on the correlation coefficient between AFP and NOP above, the result, which is -0.192 suggests that there is an evidence of negative relationship between Aggressive Financial Policy and Net Operating Profit of food and beverages manufacturing companies in Nigeria. The relationship is significant at 0.05 level. However, correlation coefficient between current Ratio and Net Operating Profit is 0.149. This implies that, Current Ratio has a positive relationship with Net Operating Profit which is not significant at 0.01 and 0.05 levels.

Furthermore, the value of correlation coefficient between Natural logarithm of Sales and Net Operating Profit of food and beverages manufacturing firms in Nigeria is 0.190. This implies that there is an evidence of positive relationship between NLS and NOP, it is significant at 0.05 level. Leverage ratio also has a weak and positive relationship with Net Operating Profit but the relationship is not significant because the correlation coefficient is 0.131. Finally, the
correlation coefficient between NOP and GDPGROW is -0.042, which shows that the relationship between them is negative and not significant at both 1% and 5% levels.

**Table 4.2: Model Summary for relationship between Working Capital Management and Profitability**

<table>
<thead>
<tr>
<th>Model</th>
<th>R</th>
<th>R Square</th>
<th>Adjusted R Square</th>
<th>Std. Error of the Estimate</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0.627</td>
<td>0.394</td>
<td>0.344</td>
<td>109.64211</td>
</tr>
</tbody>
</table>

Predictors: (Constant), GDPGROW, NLS, AFP, ICP, AIP, ACP, APP, LEV, CR

The model summary above was derived from SPSS result and it shows that (R) is 0.627 meaning that there is relatively strong positive and significant correlation between Working Capital management and Net Operating Profit of Food and Beverages manufacturing companies in Nigeria. The association is expected because if working capital is well managed, there is tendency that it will increase the profitability of an organization.

**Table 4.3: Tabular Presentation of Regression Model**

<table>
<thead>
<tr>
<th>Dependent Variables→NOP</th>
<th>Independent Variables↓</th>
<th>B</th>
<th>t-values</th>
<th>P (Sign.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>291.669</td>
<td>3.387</td>
<td>0.001</td>
<td></td>
</tr>
<tr>
<td>ACP</td>
<td>-2.388</td>
<td>-5.263</td>
<td>0.000</td>
<td></td>
</tr>
<tr>
<td>ICP</td>
<td>-0.148</td>
<td>-0.764</td>
<td>0.447</td>
<td></td>
</tr>
<tr>
<td>APP</td>
<td>-0.016</td>
<td>-0.331</td>
<td>0.741</td>
<td></td>
</tr>
<tr>
<td>AIP</td>
<td>186.035</td>
<td>1.663</td>
<td>0.099</td>
<td></td>
</tr>
<tr>
<td>AFP</td>
<td>-277.923</td>
<td>-2.249</td>
<td>0.027</td>
<td></td>
</tr>
<tr>
<td>CR</td>
<td>-50.775</td>
<td>-1.208</td>
<td>0.229</td>
<td></td>
</tr>
<tr>
<td>NLS</td>
<td>0.655</td>
<td>2.707</td>
<td>0.008</td>
<td></td>
</tr>
<tr>
<td>LEV</td>
<td>153.794</td>
<td>3.123</td>
<td>0.002</td>
<td></td>
</tr>
<tr>
<td>GDP Grow</td>
<td>-0.470</td>
<td>-0.074</td>
<td>0.941</td>
<td></td>
</tr>
<tr>
<td>R</td>
<td>0.627</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>R²</td>
<td>0.394</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>F-stat</td>
<td>7.933</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>F (Significance)</td>
<td>0.000&lt;sup&gt;a&lt;/sup&gt;</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
\[ NOP = 291.669 - 2.388 ACP_{it} - 0.148 ICP_{it} - 0.016 APP_{it} + 186.035 AIP_{it} \\
- 277.923 AFP_{it} - 50.775 CR_{it} + 0.655 NLS_{it} + 153.794 LEV_{it} \\
- 0.470 GDP_{Grow_{it}} \]

**DISCUSSIONS OF FINDINGS**

The regression results show that Account Collection Period has a negative relationship with Net Operating Profit, which means that as Account Collection Period increases, Net Operating Profit reduces; ICP also has a negative relationship with Net Operating Profit, which means that as Inventory conversion Period Increases, Net Operating Profit of quoted food and beverages manufacturing companies in Nigeria reduces, likewise, APP has a negative relationship with Net Operating Profit, which means that as Account Payment Period of these companies increases, Net Operating Profit reduces. Aggressive Investment Policy however has a positive relationship with Net Operating Profit of quoted food and Beverages Manufacturing Companies in Nigeria; this means that as food and beverages manufacturing companies in Nigeria intensify effort in aggressive investment policy, Net Operating Profit increases.

There is an inverse relationship between AFP and NOP in food and beverages manufacturing companies in Nigeria, which means that as Aggressive Financing Policy increases, the Net Operating Policy reduces also, an inverse relationship exist between current Ratio and Net Operating Profit of food and beverages manufacturing companies in Nigeria. This also means that as current ratio of quoted food and beverages manufacturing companies in Nigeria increases, profitability reduces, Natural logarithm of sales on the other hand, has a positive relationship with Net Operating Profit, and this means that the higher the sales of products in food and beverages manufacturing companies, the higher the profitability. Leverage Ratio equally has a positive relationship with Net Operating Profit of food and beverages manufacturing companies in Nigeria. This means increase in leverage ratio will bring about increase in profitability of these companies.

Lastly, there is a negative relationship between growth in Gross Domestic Product and Net Operating Profit of quoted food and beverages manufacturing companies in Nigeria. This means that when GDP increases, profitability of these companies decreases.

The value of \( a \) is 291.669, this means that, if food and beverages manufacturing companies in Nigeria do not pay attention to ACP, ICP, APP, CCC, AIP, AIP, CR, NLS, LEV and GDP grow their Net Operating Profit will stand at \( N291.669 \) billion. This shows that without these components, these companies might still survive due to some other factors which are not considered in this research.

The coefficients of the regression equation however show that a day increase in account collection period will reduce Net Operating Profit of food and Beverages manufacturing companies in Nigeria significantly by 238.8%. Also, a day increase in inventory conversion Period will bring about 14.8% reductions in Net Operating Profit of these companies. Moreover, a day increase in Account Payment Period will reduce Net Operating Profit of food and beverages manufacturing companies by 1.6%.

If aggressive investment Policy is practiced, Net Operating Profit of Nigerian quoted food and beverages manufacturing companies will increase at a higher rate. Hence, there is need to pay
closer attention to Aggressive Investment Policy by the management if the profitability must increase. If aggressive financial policy is pursued, based on the data available, Net Operating Profit of food and beverages manufacturing companies in Nigeria will reduce drastically. As current ratio increases by 1%, Net Operating Profit also reduces drastically. As Natural Logarithm of sales increases by 1%, Profitability of food and beverages manufacturing companies increases by 65.5%. Also as leverage ratio increases, Net Operating Profit increases and lastly as the growth rate of GDP increases, profitability of these companies reduces.

To test for the significant effects of each of the independent variables, we used attached significance to t-test for variables ACP, ICP, APP, AIP, AFP, CR, NLS, LEV and GDPgrow which are; 0.000, 0.447, 0.741, 0.099, 0.027, 0.229, 0.008, 0.002 and 0.941 respectively. Based on these significance values attached to t-test as well as standard error values which are shown above, Account Collection Period, Aggressive Financial Policy, Natural Logarithm of Sales and Leverage Ratio have significant effect on Net Operating Profits of food and beverages manufacturing companies in Nigeria because the associated probabilities are less than α level of 0.05. Also, Inventory conversion Period has negative but no significant effect on profitability, Account Payment Period has negative but no significant effect on Net Operating Profit, Aggressive Investment Policy has positive but insignificant effect on Profitability of food and beverages manufacturing companies in Nigeria, current ratio has negative but no significant effect on profitability and GDPgrow has negative but no significant effect on Net Operating Profit of these companies under study at α level of 0.05. There is 95% confidence that the above conclusions are right.

F-statistic value is 7.933 and the probability attached is 0.000. Since the prob (F-statistic) 0.000 is less than 0.05, the overall model is significant. That is, working capital as a whole has a significant effect on Net Operating Profit of Food and Beverages Manufacturing companies in Nigeria at significance level of 0.05. This means that we have 95% confidence that working capital has a significant effect on Net Operating Profit of these companies.

The coefficient of determination ($R^2$) is 0.394. This means that, ACP, ICP, APP, AIP, AFP, CR, NLS, LEV and GDPgrow can explain for 39.4% variation in Net Operating profit of food and beverages manufacturing companies in Nigeria while the rest 60.6% of the variation will be explained by other factors which are not accommodated in the model. The adjusted $R^2$ however shows that the model is averagely fit in explaining the relationship between working capital management and Profitability of quoted food and beverages manufacturing companies in Nigeria.

CONCLUSION AND POLICY IMPLICATION

In conclusion; the study found that there is relatively strong positive and significant correlation between Working Capital Management and Profitability and that a positive but insignificant relationship exist between Cash Conversion Cycle and Profitability. Also, Account Collection Period has significant negative relationship with Profitability while Inventory conversion Period and Account payment period have insignificant negative relationship with profitability of food and beverages manufacturing firms in Nigeria.

Moreso, Aggressive financing policy has significant negative relationships with profitability; Current ratio has insignificant negative relationships with profitability; Sales grow has significant positive relationships with profitability; Leverage ratio has significant positive
relationships with profitability and Economic growth has insignificant negative relationships with profitability of food and beverages manufacturing firms in Nigeria.

The implication of the predominantly negative relationship found in this study is that account collection period; inventory conversion period and account payment period are unnecessarily long, meaning optimal levels of the major elements of working capital have not been reached (Amarjit et al. (2010). In order to have optimal mix, we hereby recommend that management of quoted food and beverages manufacturing firms in Nigeria should consider reduction to possible minimum (optimal) level of cash conversion cycle, average collection period, inventory conversion period, account payment period; and a shift from moderate investment policy to aggressive investment policy. This we believe will contribute positively to their profitability.

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