INTELLECTUAL CAPITAL AND COPORATE PERFORMANCE OF QUOTED CONSUMER GOODS MANUFACTURING COMPANIES IN NIGERIA

ABSTRACT

This study investigated the effect of intellectual capital on corporate performance of selected consumer goods manufacturing companies in Nigeria from (2010-2019). Two research questions and two hypotheses were formulated for the study. Ex-post facto research design was employed in the study. The population of the study included all manufacturing firms quoted on the Nigerian Stock Exchange (NSE) as at 30th June 2020 with a sample size of Sixteen (16) consumer goods manufacturing companies randomly selected from the population sector. The study relied on secondary sources of data which was obtained from Annual reports of sampled companies as provided by individual companies and Nigerian Exchange Group (NXG) website. The Fixed effect panel least square regression analysis was employed in validating the hypotheses. The study revealed a significant positive effect of human capital on returns on assets. The findings also revealed a significant effect of structural capital on returns on assets which was used to proxy corporate performance. Consequent on the findings, the study therefore recommends amongst others that business executives and the entire stakeholders should begin to realize and treat intellectual capital as a very important business resource as it is a direct influencer of the firms' corporate performance.

1.0 INTRODUCTION

The establishment of a new financial and management accounting concept and practices to acknowledge the intellectual Capital of a business enterprise has become increasingly expressed by professional accountants, institutional investors, and e-accountants over the last decades. Intellectual capital management has been the core of the enterprise operation in knowledge era (Zhang, Zhu, & Kong, 2006). Whether it is in manufacturing, service or technology, the value vested in intellectual capital cannot be ignored (Chen & Lin, 2004). People from different industries, companies and backgrounds agree that the time to focus on intellectual capital and related issues has come (Chen & Lin, 2004). Wealth (2000) asserts that firms with the most highly educated workforce enjoy above average productivity and profitability.

The consumer goods sub-sector companies have been captured in this net. Hence, they have earned themselves the reputation of the sector with the highest yearly recruitment in the industry if not in the economy at large and also have a good compensation package for its employees. The sector has graduated from semi-skilled labour driven, to a more professional and skilled workforce, where people who are highly educated and skilled are considered most appropriate for the sector.

The problem which confronts businesses, users of accounting information, standard setters and regulators is how to best understand and communicate the difference between the value of a

company, usually expressed as market prices of their shares and the accounting book value of that company as well as its intellectual capital (Pourkiani, Sheikhy & Daroneh 2014). The problems tackled in the study is thus in twofold; *firstly,* few scholars have focused on the effect of intellectual capital on organizational performance in the Nigerian consumers goods sub-sector (Ruta, 2009, Yang & Lin, 2009). Also, other studies on intellectual capital measured intellectual capital employing value added intellectual capital (VAIC) equation (Bontis & Fitz-enz, 2002). There are yet other explorable measures for intellectual capital that can be explored such as the physical asset intensity to market value of shares. Therefore, this study investigated the effect of intellectual capital on the performance of consumer goods sub-sector in Nigeria.

Based on the above backdrop, the broad objective of the study is to assess the effect of intellectual capital on corporate performance of consumer goods manufacturing firms in Nigerian. Specifically, the study investigated;

1. the effect of human capital on the returns on assets of consumer goods manufacturing firms in Nigerian.
2. the effect of structural capital on the returns on asset of consumer goods manufacturing firms in Nigerian.

2.0 REVIEW OF RELATED LITERATURE

2.1 Conceptual Framework

2.1.1 Concept of Intellectual Capital

Various studies have made attempt at providing one acceptable definition for intellectual capital but have not yet succeeded and as such there is no generally agreed definition of intellectual capital (Engstrom 2003). However, some definitions are noted here: Stewart (1997) defines Intellectual Capital as packaged useful knowledge, while Fredriksen (1998), states that intellectual capital can be defined as skills and knowledge acquired by people during their lifetime and which can be used for the production of goods and services.

Intellectual Capital (IC) can be briefly defined as the knowledge-based equity of organizations and has attracted, during the last decade, a significant amount of practical interest (Campisi and Costa, 2008; Petty and Guthrie, 2000). Although the importance of Intellectual Capital (IC) is constantly increasing, many organizations face problems with its management, mostly due to measurement difficulties (Andrikopoulos, 2005; Kim et al. 2009, Nazari & Herremans, 2007). The widespread acceptance of Intellectual Capital (IC) as a source of competitive advantage led

to the development of appropriate methods of its measurement, since traditional financial tools are not able to capture all of its aspects (Campisi and Costa, 2008; Nazari and Herremans, 2007).

2.1.1.1 Human capital

The term 'human capital' is defined as a combination of the following four factors: genetic inheritance; education; experience; and attitudes about life and business (Bontis, 2001). Similarly, Hines, (2000) defines it as the combined knowledge, skills, innovativeness and ability of the company's individual employees to meet the task at hand. It obviously includes intangibilities such as the company values, culture and philosophy. A logical deduction is that when an enterprise educates its employees, it increases its human capital.

Human capital is one of the important variables in the study of intellectual capital. It is the dimension of intellectual capital which deals with the human knowledge and its experience, which is based on other elements and which will influence a firm's value by affecting the other elements. This is because, employee knowledge and capabilities are the important sources of innovation (Van Buren, 2008; Wang, 2005).

2.1.1.2 Structural Capital

Bontis (2002) defines structural capital as the non–human assets or organizational capabilities used to meet market requirement. Structural capital focuses on the knowledge embedded within an organizational routine. It comprises of the knowledge, organizational culture, intellectual procedure, process philosophy, systems, databases and contracts and explains the structure and processes employees develop and deploy in order to e productive, effective and innovative, Boujelbene and Affes (2013). Structural capital is the supportive infrastructure, processes and databases of organization that enables human capital to function, (Bontis, et.al., 2000; Maddocks and Beaney, 2002) Structural capital is owned by organization and remains with an organization even when the people leave including processes, patents, and trademarks, as well as the organization’s image, organization, information system and proprietary software and databases.

2.1.2 Corporate Performance

Performance measurement tools can help businesses evaluate their resource allocation processes in order to determine how resources can be better managed and distributed to the appropriate channels (Chen, Cheng & Hwang 2005). Traditionally, many performance measures have been based around financial aspects, omitting important non-financial aspects including the importance of dynamic capability through accumulating research and development as well as marketing

capability over time, to further enhance firm performance (Hsu & Wang, 2010). Besides that, the evaluation of the performance of manufacturing companies, for example, usually employs financial indices, providing a simple description about the manufacturing firm's financial performance in comparison to previous periods (Chen, 2001). By focusing only on financial aspects, however, is not enough for management to deal with the changing business environment. Moreover, Kwan (2003) mentioned that the financial statements is a common measure of firm's financial health over a given period of time and it can be used to compare similar firms across the same industry or to compare industries or sectors in aggregation. Indeed, there are various ways to measure financial performance. The performance can be measured by using various methods such as accounting based technique, which consist of Return on Asset (ROA), Net profit margin (NPM), Return on Investment (ROI) etc. However, the current study will focus on returns on assets as measures of performance.

2.2 Theoretical Framework

This research work is anchored on Human Capital Theory and Resource Based View (RBV)

2.2.1 Human capital theory (Becker, 1962; Rosen, 1976)

HC was initially formulated by Becker (1962) and Rosen (1976) who took it as an investment. HC is the totality of stock of habits, knowledge, social and personal characteristics embodied in the ability to perform labor so as to produce economic values (Ngoc et al, 2020). The uniqueness of HC distinguishes it from the other components of IC. The need for HC when the organizations think of achievement of goals (Ferreira et al, 2012), development and remain innovative thereafter Bukh et al, 2001). In relation to the study, HC is important because it is perceived to increase productivity and thus profitability. This means that the more a company invests in training and education of the workforce, the more productive and profitable they become. It is the ingenuity in human beigs that transcends to increased return hence, HC can be measured based on the value they are contributing to the organization.

2.2.2 Resource Based View (Barney, 1991)

The theory is associated with the resource-based view of the firm Barney (1991), developed a theory that proposes that sustainable competitive advantage is attained when the firm has a human capital that cannot be imitated or substituted by its rivals, for the employer investment in training and developing people is a means of attracting and retaining human capital as well as getting better returns from those investments. Resources can be defined as any tangible or intangible asset (Wernerfelt, 1984). Hence, it is reasonable to argue that knowledge is the most important package of intangible resources (Hitt, Ireland and Hoskisson 2010; McEvily and

Chakravarthy 2002). However, the major problem that banks are faced with, as discussed earlier, is lack of resources for innovation. According to Kim, Knotts and Jones (2008) bank' survival depends on how they manage their limited assets bank need to create opportunities to obtain these resources through collaboration with other firms (Hadjimanolis 2000). In addition to the RBV of the firm, we draw on knowledge and its management theories in relation to firm performance. (Eisenhardt and Schoonhoven 1996). Therefore, this study applies the RBV as the dominant theory that assumes intangible assets are more likely to lead to firms' performance improvement.

2.3 Empirical Review

Inyada, Ugbede and Arome, (2019) investigated the effects of intellectual capital on the performance of industrial firm and using MRA and found that HCE does not have significant positive relationship with corporate performance while SCE and CEE have significant positive effect on performance.

Ofurun, Onuoha and Nwaekpe, (2018) examined human capital efficiency (HCE) and firms performance across sectors in an emerging market in Vietnam using VAIC model and MRA. They found a positive correlation between HCE and the explanatory variable across banking sector but more in oil and gas and energy companies.

Jian, Xu and Binghanwang, (2018) explored on the topic intellectual capital, financial performance and companies' sustainable growth, evidence from Korean listed firms. Using multiple regression analysis (MRA) and the value-added intellectual capital (VAIC) application for measurement, they found that IC helps in creating corporate values and building sustainable competitive advantages in emerging economies.

Buallay, (2017) carried out a study on the correlation between IC and productivity in Saudi Arabia for 2012-2014. They found that HCE has positive impact on corporate performance.

Mbugua and Rotich (2014) examined the effects of intellectual capital on profitability of listed Kenyan commercial banks. The study focused on four variables; human capital, structural capital, relational capital and innovation capital. Descriptive research design was used to test how independent variables influenced listed banks profitability. The target population was ten commercial banks that were listed in Nairobi Securities Exchange by 2012. The study used secondary data sources from published audited accounts for last 5 years from 2009-2013 in gathering data for analysis. Descriptive statistical tool MS-Excel and SPSS was used to analyze data. The study found that structural capital and innovation capital affects listed commercial banks of Kenya profitability.

Moradi, Saeedi, Hajizadeh and Mohammadi (2013) examined the influence of intellectual capital on the improvement of listed companies‟ financial performance on Tehran stock exchange. Chosen companies in this article were active in two fields of automotive manufacturing industry and needed instruments, and drug manufacturing industry and needed raw materials in a four-year-period from 2007 to 2010. Two models were utilized for intellectual capital measurement which are VIC model (value of IC) and Pulic model. The current research indicates that there is positive significant association between each component of intellectual capital which is consisting of physical, human and structural capital and various indexes of financial performance. Moreover, there is a positive significant relationship between intellectual capital value and indexes of financial performance in the chosen companies.

Ogbo, Ezeobi and Ituma (2013) examined the impact of intellectual capital on organizational performance: evidence from Nigeria banking sector. The survey method was adopted. From a population of 7,000 workers in the commercial banks in South Eastern States of Nigeria, a sample size of 378 workers was obtained using Taro Yamane Formula. The statistical tool used in testing the hypotheses is the Chi-Square statistical test which is helpful in cause-and-effect situation or to show the relationship between events. Findings indicated a notable similar pattern of intellectual capital –organizational performance link as found in Western countries of North America and Europe. Findings specifically showed that human capital and structural capital have a positive and significant effect on organizational outcomes in the Nigerian banking sector.

Abdel-Aziz, Abdul-Naser and Shamaric (2013) examined the impact of intellectual capital on Jordanian Telecommunication Companies' (JTC) Business Performance (BP). The study surveyed the managers at JTC companies. Practical data were used in the empirical analysis collected from 84 managers out of about 500 managers, by means of a questionnaire. Statistical techniques such as descriptive statistics, t-test, ANOVA test, correlation and multiple regressions were employed. The results showed a positive significant effect of IC on JTCs' BP. The results also indicated that RC is positively and significantly affect JTCs' BP, while SC and RC do not significantly affect JTCs' BP. The Empirical results also indicated that there are strong inter-relationships and interactions among the three components of IC.

Emadzadeh, Nadia, Asiya, Mahboobe, Fatemeh and Mojgan, (2013) examined the effect of Intellectual Capital on Firm Performance. Variables were based on data collected and the study adopted descriptive research design. To calculate the performance of the corporate, balanced scorecard approach was used. A total of 89 questionnaires were distributed among the employees and operation administrators of 4 factories. SPSS18 and Amos 20 were used for data analysis.

The results showed that intellectual capital have positive and significant impact on financial performance, customer, business processes, and learning and growth.

Ngari, Gichira, Aduda and Waititu (2013) examined the relationship between Intellectual Capital Accounting and Business Performance of Pharmaceutical Companies in Kenya. To do this study, the researchers formulated three hypotheses. With a target population of eighty-nine (89) local pharmaceutical manufacturing companies, a sample size of 31 companies qualified for the study as they were the only ones that has been licensed by Pharmacy and Poisons Board and this signifies a 35% o total population. Data were collected through a 5-Scale Likert structured questionnaire administered to 31 pharmaceutical companies. The Multi-regression analysis tool, Analysis of Variance (ANOVA) and Pearson Bi-variate correlation coefficient were used to test the hypotheses. The result shows that intellectual capital accounting has positive relationship with business performance; however, human capital was the most prominent of intellectual accounting.

Wagiciengo and Belal (2012) investigated the Intellectual capital disclosures by South African companies. The main purpose of their study is to examine the extent and nature of intellectual capital disclosures in 'Top 20' South African companies over a 5 years period (2002–2006). The results show that intellectual capital disclosures in South Africa have increased over the 5 years study period with certain firms reporting considerably more than others. Out of the three broad categories of intellectual capital disclosures human capital appears to be the most popular category. This finding stands in sharp contrast to the previous studies in this area where external capital was found to be most popular category.

Chidiebere (2012) examined the relationship between intellectual capital and financial performance in the Nigeria banking sector. The study adopted the ex-post facto research design. It was systematically conducted using longitudinal time series data generated from the Nigeria Stock Exchange and from annual reports and accounts of the selected banks in Nigeria spanning from year 2000 to 2011. The multiple regression analysis method was adopted for the test of all the hypotheses. There was a positive significant relationship between components of VAIC and the Return on Assets of the banks in Nigeria (VIAC coefficient). There was also a positive significant relationship between components of VAIC and the Return on Equity of the banks in Nigeria (VIAC coefficient).

2.4 Gaps in Knowledge

From the review of related literature, most of these studies emanated and are domiciled outside the shores of this country (Roos et al, 1997 in UK; Sveiby, 1997 in Australia; Bonti, 1999 in

Canada; Chu et al, 2011 in Hong Kong, Firer al, 2003 in South Africa; Adi et al, 2016 in Indonesia; Gosh et al, 2009 in India; Goh, 2005 in Malaysia; Xu et al, 2018 in Korea; Manvel, 2019 in Mexico; Kiran et al, 2008 in New Zealand). However, few studies were done in Nigeria on the same topic (Nnubia et al, 2019 for non- financial companies', Ekwe, 2012 for banking services, Anuonye, 2015 for insurance, Onyekwelu, 2016 for pharmaceutical companies.

Mixed evidences abound in results obtained in Nigeria and across other nation of the world probably due to the different sectors that were studied, differences in sample selection or the statistical research design method applied. However, most studies done in Nigeria tilted towards the service and non-financial sectors probably because they recognize the pivotal role of IC in the growth and development of an organization. The findings therefore, could not be generalized for all the firms (especially manufacturing firms that has the capacity to expand and aid economic growth and development as the topmost employer of labor) in Nigeria

3.0 METHODOLOGY

3.1 Research Design

The research work adopted the *ex-post facto* research design. *Ex-post facto* means after the event, meaning that the events under investigation had already taken place and data already exist. The choice of *ex-post facto* research design is based on the fact that the study relies on historical accounting data obtained from annual reports and accounts.

3.2 Population of the Study

The population of the study comprises of quoted manufacturing firms on the Nigerian Exchange Group (NXG) as at end of 2020 financial year.

3.3 Sample Size of the Study

The study was limited to Sixteen (16) companies selected using purposive sampling technique; the decision was premised on the classification of the firms as manufacturing (based on the nature and description of activities) as shown on the Nigerian Exchange Group (NXG) website. The sample selection criteria are shown in the table below.

Table 1: Sample selection

S/No	Sector	Number of firms
1	Consumer Goods	16
	Total	**16**

Source: The Nigerian Exchange Group (2020)

The exclusion of the sectors was consistent with prior studies; firms from the Natural resources and Oil & gas are mainly excluded because of different regulatory environment, and it is also challenging to estimate discretionary accruals for these firms (Abid, Shaique, & Anwar-ul-Haq, 2018; Tsipouridou & Spathis, 2012).

3.4 Sources of Data

The data for this study was obtained from secondary sources. Secondary data is information or data that has previously been collected and recorded for other purposes (Blumberg, Cooper, & Schindler, 2008). One major advantage of secondary data is that analysis time can be saved (Blumberg, Cooper, & Schindler, 2008). The data was extracted from the annual reports and accounts of the selected companies. Specifically, the Statement of Financial Position and Statement of Profit or Loss and Comprehensive Income provided data in computing the selected ratios; and, the Statement of Cash Flows.

3.4.1 Reliability of Data

The data from the Annual Report is considered reliable, because, annual reports and accounts of publicly quoted companies are subject to independent external audit by auditors in accordance with CAMA in order to give a true and fair view of the state of affairs of the company. Hence, on the strength of the external audit of each company's financial statement, the data employed in the study is considered reliable.

3.5 Methods of Data Analysis

The study employs *descriptive* and *inferential* statistics in analysing the data for the study where the multiple regression was adopted in validating the hypotheses. The panel least square regression analysis is used to determine the independent variables' ability to explain the dependent variables' variance (Mussalo, 2015). The strength of Multiple Regression Models is its ability to analyze several variables simultaneously (Mussalo, 2015).

3.5.1 Model Specification

The following model was used to examine the relationship between intellectual capital and corporate performance:

$$ROA = f(HC, fsize, flev) \quad \ldots\ldots\ldots\ldots (1)$$

$$ROA = f(SC, fsize, flev) \quad \ldots\ldots\ldots\ldots (2)$$

Equations 1-2 can be written econometrically as presented in equations 3 as follows:

$$ROA_{it} = \eta_0 + \eta_1 HC_{it} + \eta_2 SC_{it} + \eta_3 fsize_{it} + \eta_4 flev_{it} + + \sum_t \ldots\ldots\ldots\ldots\ldots\ldots (3)$$

Where:

HC	=	Human Capital
SC	=	Structural Capital
ROA	=	Returns on asset
fsize	=	Firm size
flev	=	Firm leverage
t	=	Time dimension of the variables
η_0	=	Constant or Intercept.
η_{1-4}	=	Coefficients to be estimated or the Coefficients of slope parameters.

The expected signs of the coefficients (a priori expectations) are such that $\eta_2 > 0$; while, η_1, η_3 and$\eta_4 < 0$

Table 2: Description of variables

Label	Description	Proxy	Source
ROA	Returns on Assets	Ratio of earnings before interest, tax, and depreciation to Total Assets. (EBIT/ASSET)	(Chen, et al ,2005
HC	Human capital	(VA = OP + EC + D +A)/Personnel cost	Ngoc and Doc, (2020)
SC	Structural capital	(VA-HC)/HC	Pulic, (2000); (Firer et al., 2003). (Amahalu, & Ezechukwu, 2017; (Ortiz, 2006))
Flev	Leverage (Gearing)	The ratio of debt to equity as at the year-end (DEBT/EQUITY)	(Riahi- Belkaoui, 2003).
Fsize	Firm size	Log(10) * Total Asset	Kim and Jang (2018); Riguen and Jarboui (2017); Goldman (2016)

Source: Author's Compilation, (2021).

3.5.2 Decision rule

The decision rule is based on the sign and significance of the computed *t-statistic* from the regression output. If the p value of the *t statistic* < *.05* (the chosen alpha level) the null hypothesis is rejected; and, the variable is postulated to have a significant effect.

4.0 DATA PRESENTATION AND ANALYSIS

4.1 Descriptive statistics

The descriptive statistics of the variables utilized in the study are presented in Tables 4.1a-b below shows the mean, median, standard deviation, observations, minimum and maximum values of each selected variable. The description helps in showing the nature of the data in terms of dispersion and central tendencies.

Table 3a: Descriptive statistics of dependent variables

	SC	ROA	HC	F_SIZE	F_LEVERAGE
Mean	1.295090	6.553417	1.829254	7.468638	12.70765
Median	1.291636	5.249700	1.861533	7.595600	12.33205
Maximum	1.623510	26.51650	2.375715	8.683600	75.91200
Minimum	0.892809	-44.16130	1.214735	5.247300	-333.6499
Std. Dev.	0.188923	8.992317	0.319861	0.790996	29.99096
Skewness	-0.291151	-0.937576	-0.031438	-0.730878	-9.601650
Kurtosis	2.224601	8.817075	1.963612	3.026444	112.7932
Jarque-Bera	6.268798	249.0304	7.187030	14.24954	82822.12
Probability	0.043526	0.000000	0.027501	0.000805	0.000000
Sum	207.2144	1048.547	292.6806	1194.982	2033.224
Sum Sq. Dev.	5.675007	12857.02	16.26748	99.48220	143013.7
Observations	160	160	160	160	160

Source: E-views, 9.0

The observations row in table 3a shows the number of cases included in each analysis of the variables of the study as one hundred and sixty for all variables. The Mean of each variable shows the measure of central tendency which calculates as the average of a set of observations; while, the Standard Deviation (SD) is the measure of the average distance between the values of the data in the set and the mean. A low SD indicates that the data points tend to be very close to the mean; while a high SD indicates that the data points are spread out over a large range of values.

Table 3 b: Correlation matrix of independent variables

	SC	HC	F_SIZE	F_LEVERAGE
SC	1.000000	0.970562	0.850989	0.086266
HC	0.970562	1.000000	0.738096	0.089765
F_SIZE	0.850989	0.738096	1.000000	0.023213
F_LEVERAGE	0.086266	0.089765	0.023213	1.000000

Source: E-views, 9.0

Table 3b showed the nature of relationship between the independent and control variables. From the table, Structural capital has a positive relationship with Human capital, firm size (FSIZE) and Firm leverage (0.970562, 0.850989, 0.086266 respectively). Human capital also shows a positive association between Structural capital, firm size (FSIZE) and Firm leverage (0.970562, 0.738096, 0.089765 respectively).

4.2 Test of Hypotheses

4.2.1 Hypothesis one

H_{01}: There is no significant effect of Human capital and returns on assets.

Table 4: PLS regression output for hypothesis one

Dependent Variable: ROA
Method: Panel Least Squares
Sample: 2010 2019
Periods included: 10
Cross-sections included: 16
Total panel (balanced) observations: 160

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	9.184979	26.85924	0.341967	0.7329
HC	40.53698	9.093370	4.457862	0.0000
F_SIZE	-10.28176	4.025307	-2.554280	0.0118
F_LEVERAGE	0.000532	0.017778	0.029905	0.9762

Effects Specification

Cross-section fixed (dummy variables)
Period fixed (dummy variables)

R-squared	0.648555	Mean dependent var	6.553417
Adjusted R-squared	0.576669	S.D. dependent var	8.992317
S.E. of regression	5.850752	Akaike info criterion	6.528646
Sum squared resid	4518.532	Schwarz criterion	7.066801
Log likelihood	-494.2917	Hannan-Quinn criter.	6.747172
F-statistic	9.021944	Durbin-Watson stat	0.913684
Prob(F-statistic)	0.000000		

Source: E-views, 9.0

The fixed effect panel least square regression output shown above with one IV and two CVs, as follows: log of total asset (Firm size) and debt to equity ratio (Leverage). The overall R-squared is 0.648555 and the Adjusted R-squared 0.576669. The *p*-value of the F-statistic is less than .05 (i.e., margin of error), which confirms the statistical significance of the model. The *coefficient* of the variable of interest: Human capital (HC) was (0.0000) and *t-statistic* (4.457862) positive and statistically significant (*p*-value<.05). Therefore, the null hypothesis is rejected and alternate, accepted. Hence, there is a significant effect of Human capital and returns on assets.

4.2.2 Hypothesis two

H_{01}: Structural capital has no significant effect on returns on assets.

Table 5: PLS regression output for hypothesis two

Dependent Variable: ROA
Method: Panel Least Squares
Sample: 2010 2019
Periods included: 10
Cross-sections included: 16
Total panel (balanced) observations: 160

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	8.741649	26.93129	0.324591	0.7460
SC	56.56080	12.89572	4.386015	0.0000
F_SIZE	-10.10128	4.026980	-2.508400	0.0133
F_LEVERAGE	0.000251	0.017815	0.014105	0.9888

Effects Specification

Cross-section fixed (dummy variables)
Period fixed (dummy variables)

R-squared	0.647079	Mean dependent var	6.553417
Adjusted R-squared	0.574890	S.D. dependent var	8.992317
S.E. of regression	5.863030	Akaike info criterion	6.532838
Sum squared resid	4537.516	Schwarz criterion	7.070994
Log likelihood	-494.6271	Hannan-Quinn criter.	6.751364
F-statistic	8.963744	Durbin-Watson stat	0.904991
Prob(F-statistic)	0.000000		

Source: E-views, 9.0

Table 5 shows the fixed effect panel least square regression output shown above with one IV and two CVs, as follows: log of total asset (Firm size) and debt to equity ratio (Leverage). The overall R-squared is 0.647079 and the Adjusted R-squared 0.574890. The *p*-value of the F-statistic is less than .05 (i.e., margin of error), which confirms the statistical significance of the model. The *coefficient* of the variable of interest: Structural capital (SC) was (0.0000) and *t-statistic* (4.386015) positive and statistically significant (*p*-value<.05). Therefore, the null hypothesis is rejected and alternate, accepted. Hence, structural capital has a significant effect on returns on assets.

4.3 Discussion of Findings

This study examined effect of intellectual capital on corporate performance selected manufacturing companies in Nigeria. The study focused on the consumer goods sub sector as quoted in Nigerian stock exchange. The findings of the study revealed that there is a significant

effect of human capital on the returns on assets. This position is also held by Ahangar (2011); Farahmand and Khorasani, (2013); Lev and Radhakrishnan, (2003). Other studies with similar result include, (Abdullah & Coskun, 2007; Kiong & Hoo 2009).

The study further found out that structural capital has a significant effect on returns on asset. This position is also shared by (Tan, Plowman, Hancock 2007; Badinger & Tondl 2005; Fathi & Samiloglu 2006; Lev & Radhakrishnan, 2003; Abdel-Aziz, Abdul-Naser and Shamaric 2013; Boujelbenen & Affes 2013). Other studies that slightly refuted the result of the study are Emadzadeh, Nadia, Asiya, Mahboobe, Fatemeh and Mojgan (2013); Kehelwalatenna and Gunaratne (2010); and Mbugua and Rotich, (2014).

5.0 SUMMARY OF FINDINGS, CONCLUSION AND RECOMMENDATIONS

5.1 summary of findings

This section summarises the results of the empirical findings from the test of hypotheses as given below:

i. There is a significant effect of Human capital and returns on assets ($P < 0.05$).
ii. Structural capital has a significant effect on returns on assets ($P < 0.05$).

5.2 Conclusion

The study focused on intellectual capital and corporate performance of selected consumer goods firms in Nigeria. The study sees intellectual capital as the as the knowledge-based equity of organizations and has attracted, during the last decade, a significant amount of practical interest. The study was anchored on the Human Capital Theory and Resource Based View (RBV) where the human capital theory emphasized on the totality of stock of habits, knowledge, social and personal characteristics embodied in the ability to perform labor so as to produce economic values while the RBV upholds that sustainable competitive advantage is attained when the firm has a human capital that cannot be imitated or substituted by its rivals. The study thus found that there is a significant effect of intellectual capital on corporate performance of consumers goods firms in Nigeria.

5.3 Recommendations

The study therefore makes the following recommendations:

i. **Recognition of intellectual capital as an important business resource:** The results of the analysis of this study show that there is a significant effect of human capital (HC) on the returns on assets. Hence, it is highly recommended that business executives and the entire stakeholders should begin to realize and treat intellectual capital as a very important business resource as it is a direct influencer of the firms' corporate performance.

ii. **Education and Training:** It is also recommended that firms should take advantage of the process of globalization to enhance employee quality through continuing education programs, bootcamps and other kind of personnel trainings.

5.4 Contribution to knowledge

The study has several academic contributions to the literature and more broadly to intellectual capital. Firstly, it developed links between human capital and structural capital with the various control variables employed in the study as well as corporate performance which can be beneficial to managers in understanding actual effect of intellectual capital on employee performance and overall corporate performance. It also provides additional evidence from a developing country perspective in sub-Saharan Africa such as Nigeria.

5.5 Suggestions for Further Studies

Future studies may consider a distinction between large and small firms in investigating the effect of intellectual capital and corporate performance in Nigeria. Although, only few of the findings seem to conflict with some earlier studies on the issue, the development may be attributed to the evolving market and the institutional structures of developing countries like Nigeria. The reasons for this contradiction should therefore constitute an area of future research. Moreover, analysis of the effect of intellectual capital on corporate performance can be extended to neighbouring economies in sub-Saharan African region.

Furthermore, the accounting profession should now begin to think of developing a system of identifying, measuring and reporting intellectual capital of a firm which can only be achieved if another research in this area is embarked upon.

COMPETING INTERESTS DISCLAIMER:

Authors have declared that no competing interests exist. The products used for this research are commonly and predominantly use products in our area of research and country. There is

absolutely no conflict of interest between the authors and producers of the products because we do not intend to use these products as an avenue for any litigation but for the advancement of knowledge. Also, the research was not funded by the producing company rather it was funded by personal efforts of the authors.

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APPENDIX A: Variables Employed in the Study

Companies	Fiscal Year	RETA_Return on Asset	LASU_Total Asset US Dollar	LTDA_Long Term Debt to Asset_Capital Structure	Log of Total Asset	Firm Age	Total Value Added	Employee Cost	HC	SC
Cadbury Nig	2010	4.12340	5.27520	15.68510	7.45220	35	6.48800	2.84633	2.27942	1.478596
Cadbury Nig	2011	10.90600	5.33760	9.48410	7.52710	36	6.54340	2.84933	2.29647	1.4905
Cadbury Nig	2012	8.60380	5.40650	7.99800	7.60380	37	6.52840	2.85233	2.28879	1.486364
Cadbury Nig	2013	13.95150	5.43850	11.09710	7.63520	38	6.55670	2.85533	2.29630	1.492085
Cadbury Nig	2014	5.24870	5.24170	11.22780	7.45970	39	6.46660	2.85833	2.26237	1.470868
Cadbury Nig	2015	4.05850	5.16940	15.76550	7.45360	40	6.36020	2.86133	2.22281	1.445966
Cadbury Nig	2016	-1.04390	5.07900	15.90510	7.45320	41	6.30260	2.86433	2.20037	1.432175
Cadbury Nig	2017	1.05550	4.96890	14.60340	7.45370	42	6.23480	2.86733	2.17442	1.416081
Cadbury Nig	2018	2.99000	4.90200	17.31500	7.43980	43	6.21820	2.87033	2.16637	1.411624
Cadbury Nig	2019	3.71800	4.97370	18.52070	7.45940	44	6.30900	2.87333	2.19571	1.43154
Champion Breweries	2010	-44.16130	4.27040	1.17590	6.44740	28	5.29580	2.87633	1.84116	1.201056
Champion Breweries	2011	-17.15590	4.65300	4.46460	6.84250	29	5.26360	2.87933	1.82806	1.193171
Champion Breweries	2012	-19.65950	4.63520	0.92650	6.83250	30	5.25440	2.88233	1.82297	1.190505
Champion Breweries	2013	-12.89190	4.76410	0.68760	6.96080	31	5.35220	2.88533	1.85497	1.212072
Champion Breweries	2014	-7.86590	4.76390	1.49100	6.98190	32	5.50080	2.88833	1.90449	1.245116
Champion Breweries	2015	0.74680	4.72990	1.29270	7.01410	33	5.46010	2.89133	1.88844	1.2353
Champion Breweries	2016	5.32450	4.62410	0.82530	6.99830	34	5.41290	2.89433	1.87017	1.224022
Champion Breweries	2017	5.13000	4.51910	3.22960	7.00380	35	5.39450	2.89733	1.86188	1.219264
Champion Breweries	2018	-2.51560	4.48280	2.34560	7.02070	36	5.34010	2.90033	1.84120	1.206378
Champion Breweries	2019	1.53450	4.55490	3.50710	7.04070	37	6.55490	2.90333	2.25771	1.480086
Dangote Sugar	2010	18.11130	5.61750	3.45670	7.79440	4	6.97720	3.05633	2.28287	1.535936
Dangote Sugar	2011	10.16770	5.67270	4.66340	7.86220	5	7.04080	3.05933	2.30142	1.549155
Dangote Sugar	2012	13.01450	5.72160	5.13690	7.91890	6	7.03160	3.06233	2.29616	1.546351
Dangote Sugar	2013	13.04230	5.72320	7.79560	7.91990	7	7.01680	3.06533	2.28908	1.542318
Dangote Sugar	2014	12.53840	5.74950	6.61530	7.96760	8	6.95910	3.06833	2.26804	1.528863

Dangote Sugar	2015	11.24000	5.72700	5.01740	8.01130	9	6.92040	3.07133	2.25322	1.519593
Dangote Sugar	2016	8.07030	5.87720	6.43300	8.25140	10	7.05550	3.07433	2.29497	1.548476
Dangote Sugar	2017	20.39340	5.80550	3.42420	8.29020	11	7.02580	3.07733	2.28308	1.541178
Dangote Sugar	2018	12.54960	5.70550	3.84630	8.24330	12	6.83940	3.08033	2.22034	1.499531
Dangote Sugar	2019	11.54390	5.80140	4.14550	8.28710	13	6.92130	3.08333	2.24475	1.51672
Flour Mills Of Nigeria	2010	2.71160	5.98000	26.14350	8.15690	32	7.33820	3.14633	2.33230	1.591026
Flour Mills Of Nigeria	2011	5.78840	6.02340	34.93040	8.21290	33	7.38850	3.14933	2.34605	1.601116
Flour Mills Of Nigeria	2012	3.59730	6.16980	32.50610	8.36710	34	7.41480	3.15233	2.35216	1.605997
Flour Mills Of Nigeria	2013	2.75710	6.25080	29.19820	8.44750	35	7.48320	3.15533	2.37160	1.619986
Flour Mills Of Nigeria	2014	1.80580	6.25510	28.60600	8.47310	36	7.50330	3.15833	2.37571	1.62351
Flour Mills Of Nigeria	2015	2.46840	6.25090	23.12460	8.53510	37	7.40540	3.16133	2.34249	1.60151
Flour Mills Of Nigeria	2016	4.17560	6.16410	19.26840	8.53830	38	7.36060	3.16433	2.32611	1.59101
Flour Mills Of Nigeria	2017	1.83100	6.19890	15.03550	8.68360	39	7.43500	3.16733	2.34740	1.606272
Flour Mills Of Nigeria	2018	3.33440	6.07320	14.18960	8.61100	40	7.39670	3.17033	2.33310	1.597182
Flour Mills Of Nigeria	2019	0.95970	6.13420	19.48570	8.62000	41	7.43640	3.17333	2.34340	1.604936
Guinness Nig	2010	17.52160	5.71730	17.28310	7.89430	46	7.06190	3.26633	2.16203	1.500114
Guinness Nig	2011	19.43870	5.77540	16.70700	7.96490	47	7.10270	3.26933	2.17252	1.508007
Guinness Nig	2012	13.40880	5.82810	20.94020	8.02530	48	7.06890	3.27233	2.16020	1.50006
Guinness Nig	2013	9.79980	5.88630	19.61530	8.08300	49	7.09130	3.27533	2.16506	1.504042
Guinness Nig	2014	7.23460	5.90360	32.50860	8.12170	50	7.02020	3.27833	2.14139	1.488197
Guinness Nig	2015	6.37640	5.80300	22.74490	8.08720	51	6.98950	3.28133	2.13008	1.480929
Guinness Nig	2016	-1.47150	5.76250	20.60130	8.13670	52	6.83430	3.28433	2.08088	1.447301
Guinness Nig	2017	1.31730	5.67970	26.96250	8.16450	53	6.81540	3.28733	2.07323	1.442558
Guinness Nig	2018	4.38330	5.64760	-23.67320	8.18540	54	6.81740	3.29033	2.07195	1.44224
Guinness Nig	2019	3.41040	5.72050	14.22680	8.20630	55	6.83320	3.29333	2.07486	1.44484
Honywell Flour Mill	2010	3.91870	5.30030	10.35660	7.47720	2	6.54840	3.29633	1.98657	1.38391
Honywell Flour Mill	2011	8.55390	5.27500	10.26930	7.46450	3	6.54270	3.29933	1.98304	1.381995
Honywell Flour Mill	2012	6.01340	5.45540	18.94960	7.65260	4	6.58330	3.30233	1.99353	1.389857
Honywell Flour Mill	2013	5.12920	5.54710	16.92220	7.74380	5	6.66330	3.30533	2.01592	1.406023

Honywell Flour Mill	2014	5.25070	5.58700	23.75960	7.80500	6	6.72300	3.30833	2.03214	1.417892
Honywell Flour Mill	2015	1.64880	5.54790	23.20660	7.83210	7	6.60650	3.31133	1.99512	1.392606
Honywell Flour Mill	2016	-3.97630	5.50690	20.34380	7.88110	8	6.53240	3.31433	1.97095	1.376278
Honywell Flour Mill	2017	3.80460	5.56890	30.48860	8.05370	9	6.44140	3.31733	1.94174	1.356409
Honywell Flour Mill	2018	3.54630	5.55850	32.23140	8.09630	10	6.51630	3.32033	1.96254	1.371475
Honywell Flour Mill	2019	0.04970	5.65260	28.02480	8.13830	11	6.58590	3.32333	1.98171	1.385412
International Breweries	2010	2.00910	4.81920	75.91200	6.99610	16	5.70380	3.32633	1.71474	1.199236
International Breweries	2011	1.01950	4.97050	20.63410	7.15990	17	6.00650	3.32933	1.80411	1.26223
International Breweries	2012	1.01950	4.96270	20.63410	7.15990	18	5.99870	3.33233	1.80015	1.259943
International Breweries	2013	10.88040	5.16570	25.18610	7.36240	19	6.24350	3.33533	1.87193	1.310685
International Breweries	2014	8.63950	5.16890	26.65580	7.38690	20	6.24900	3.33833	1.87189	1.311165
International Breweries	2015	6.45140	5.19540	26.60820	7.47960	21	6.23070	3.34133	1.86473	1.306653
International Breweries	2016	7.92290	5.15060	10.58470	7.52480	22	6.19260	3.34433	1.85167	1.297996
International Breweries	2017	2.30050	5.16810	11.19120	7.65290	23	6.23000	3.34733	1.86118	1.305163
International Breweries	2018	-1.24610	5.95390	50.35420	8.49180	24	6.74360	3.35033	2.01281	1.412034
International Breweries	2019	-7.61080	6.07670	42.05890	8.56250	25	6.83600	3.35333	2.03857	1.430645
Mcnichols Consolidated	2010	-3.63640	3.07030	0.99650	5.24730	2	4.44060	3.50633	1.26645	0.905261
Mcnichols Consolidated	2011	2.68050	3.16180	19.40460	5.35130	3	4.59970	3.50933	1.31070	0.937214
Mcnichols Consolidated	2012	3.49630	3.22220	20.87010	5.41950	4	4.59340	3.51233	1.30779	0.935449
Mcnichols Consolidated	2013	7.29040	3.30990	23.20100	5.50660	5	4.63770	3.51533	1.31928	0.943985
Mcnichols Consolidated	2014	10.71660	3.35980	12.48090	5.57780	6	4.69780	3.51833	1.33523	0.955727
Mcnichols Consolidated	2015	14.36090	3.33920	7.38050	5.62340	7	4.92000	3.52133	1.39720	1.000417
Mcnichols Consolidated	2016	12.17490	3.30260	5.97820	5.67680	8	4.86470	3.52433	1.38032	0.988664
Mcnichols Consolidated	2017	7.08910	3.24710	13.34140	5.73180	9	4.70080	3.52733	1.33268	0.954863
Mcnichols Consolidated	2018	4.75240	3.37900	41.12710	5.91680	10	4.55810	3.53033	1.29112	0.925401
Mcnichols Consolidated	2019	2.37060	3.37310	34.97390	5.85890	11	4.52270	3.53333	1.28001	0.917743
Nascon Allied	2010	21.94850	4.69860	7.04910	6.87560	19	5.97210	3.59633	1.66061	1.198858
Nascon Allied	2011	21.93400	4.81250	8.23910	7.00200	20	6.02360	3.59933	1.67353	1.208576
Nascon Allied	2012	25.87860	4.83170	6.87440	7.02900	21	6.13030	3.60233	1.70176	1.229354

Nascon Allied	2013	23.61560	4.86140	6.40200	7.05810	22	6.03820	3.60533	1.67480	1.210263
Nascon Allied	2014	14.86980	4.88080	7.18760	7.09880	23	6.03320	3.60833	1.67202	1.208641
Nascon Allied	2015	12.92220	4.92780	7.70240	7.21200	24	6.12470	3.61133	1.69597	1.226343
Nascon Allied	2016	9.81650	5.01680	5.82070	7.39100	25	6.08810	3.61433	1.68443	1.21839
Nascon Allied	2017	17.73910	4.99420	6.54880	7.47890	26	6.14770	3.61733	1.69951	1.229687
Nascon Allied	2018	14.60240	4.94320	7.55930	7.48100	27	6.07330	3.62033	1.67755	1.214183
Nascon Allied	2019	4.77190	5.10160	22.85370	7.58740	28	6.15340	3.62333	1.69827	1.229566
Nestle Nig	2010	20.88270	5.60370	43.12790	7.78070	32	6.94070	3.68633	1.88282	1.372063
Nestle Nig	2011	21.22320	5.70110	38.21450	7.89060	33	7.00160	3.68933	1.89780	1.383395
Nestle Nig	2012	23.75960	5.75190	33.26990	7.94920	34	7.06980	3.69233	1.91472	1.396157
Nestle Nig	2013	20.57000	5.83750	31.77180	8.03430	35	7.12740	3.69533	1.92876	1.406813
Nestle Nig	2014	20.96470	5.80760	24.53200	8.02560	36	7.13830	3.69833	1.93014	1.408245
Nestle Nig	2015	19.91090	5.79210	18.01460	8.07630	37	7.09560	3.70133	1.91704	1.399107
Nestle Nig	2016	4.67310	5.85520	10.42210	8.22940	38	7.08570	3.70433	1.91281	1.396442
Nestle Nig	2017	22.97190	5.68200	17.19670	8.16670	39	7.10290	3.70733	1.91591	1.399117
Nestle Nig	2018	26.49350	5.67260	12.31800	8.21040	40	7.08750	3.71033	1.91021	1.395372
Nestle Nig	2019	23.62420	5.80070	11.52230	8.28640	41	7.16770	3.71333	1.93026	1.410441
Nigeria Breweries	2010	26.51650	5.88140	16.90480	8.05840	38	7.29220	3.71633	1.96220	1.434208
Nigeria Breweries	2011	16.14360	6.18290	28.34350	8.37240	39	7.33490	3.71933	1.97210	1.441871
Nigeria Breweries	2012	14.99910	6.20690	28.92020	8.40420	40	7.40530	3.72233	1.98942	1.454968
Nigeria Breweries	2013	17.04400	6.20600	15.86670	8.40270	41	7.43240	3.72533	1.99510	1.459548
Nigeria Breweries	2014	12.17550	6.32510	18.10830	8.54310	42	7.40750	3.72833	1.98681	1.453917
Nigeria Breweries	2015	10.68340	6.26750	12.30090	8.55170	43	7.38400	3.73133	1.97892	1.448566
Nigeria Breweries	2016	7.74000	6.19060	15.51900	8.56480	44	7.32240	3.73433	1.96083	1.43575
Nigeria Breweries	2017	8.64630	6.09760	12.52590	8.58230	45	7.25250	3.73733	1.94055	1.421319
Nigeria Breweries	2018	5.00640	6.05130	21.05250	8.58910	46	7.20650	3.74033	1.92670	1.411585
Nigeria Breweries	2019	4.20760	6.09720	19.72390	8.58290	47	7.22350	3.74333	1.92970	1.414195
Nigerian Enamelware	2010	5.25110	3.97730	0.50330	6.15430	32	5.39540	3.74633	1.44018	1.055757
Nigerian Enamelware	2011	8.64570	3.81880	1.53740	6.00830	33	5.38440	3.74933	1.43610	1.053068

Nigerian Enamelware	2012	4.05790	4.13860	52.23740	6.33590	34	5.39900	3.75233	1.43884	1.055386
Nigerian Enamelware	2013	3.35710	4.14640	15.22840	6.34310	35	5.40400	3.75533	1.43902	1.055826
Nigerian Enamelware	2014	2.79360	4.27110	10.43170	6.48910	36	5.39190	3.75833	1.43465	1.052926
Nigerian Enamelware	2015	1.48050	4.41670	6.19370	6.70090	37	5.33220	3.76133	1.41764	1.040738
Nigerian Enamelware	2016	2.94020	4.28280	6.51550	6.65700	38	5.27220	3.76433	1.40057	1.028504
Nigerian Enamelware	2017	0.77330	4.28070	4.90100	6.76540	39	5.11810	3.76733	1.35855	0.997935
Nigerian Enamelware	2018	-0.07280	4.12270	5.40400	6.66050	40	4.87990	3.77033	1.29429	0.951006
Nigerian Enamelware	2019	-5.51470	4.15590	5.70540	6.64160	41	4.58360	3.77333	1.21473	0.892809
Nigerian Northen Flour Mill	2010	5.81300	4.23250	18.29050	6.40950	33	6.03250	3.77633	1.59745	1.174433
Nigerian Northen Flour Mill	2011	11.02060	4.42690	13.21720	6.61640	34	6.06930	3.77933	1.60592	1.180997
Nigerian Northen Flour Mill	2012	0.15020	4.32880	10.31900	6.52610	35	6.10570	3.78233	1.61427	1.187476
Nigerian Northen Flour Mill	2013	6.21360	4.36240	10.58660	6.55910	36	6.07150	3.78533	1.60395	1.180225
Nigerian Northen Flour Mill	2014	7.14940	4.29610	9.33650	6.51410	37	6.03860	3.78833	1.59400	1.173234
Nigerian Northen Flour Mill	2015	-4.85220	4.32990	23.87080	6.61410	38	5.93820	3.79133	1.56626	1.153141
Nigerian Northen Flour Mill	2016	-5.01290	4.22070	2.88580	6.59490	39	4.81660	3.79433	1.26942	0.934863
Nigerian Northen Flour Mill	2017	-0.37430	4.15250	2.71480	6.63720	40	4.68860	3.79733	1.23471	0.909557
Nigerian Northen Flour Mill	2018	-1.03060	4.23430	23.13530	6.77210	41	5.11880	3.80033	1.34693	0.992509
Nigerian Northen Flour Mill	2019	-0.63480	4.21260	21.14130	6.69840	42	5.33230	3.80333	1.40201	1.033381
Pz Cussons	2010	9.47060	5.59370	8.46580	7.77060	37	6.82010	3.95633	1.72384	1.288126
Pz Cussons	2011	8.26540	5.64890	8.60170	7.83840	38	6.82920	3.95933	1.72484	1.289198
Pz Cussons	2012	3.94190	5.61170	6.65430	7.80890	39	6.86100	3.96233	1.73156	1.294551
Pz Cussons	2013	7.36020	5.66240	6.17250	7.85910	40	6.85660	3.96533	1.72914	1.293073

Pz Cussons	2014	7.16230	5.63300	6.28820	7.85100	41	6.84480	3.96833	1.72485	1.2902
Pz Cussons	2015	6.78280	5.54440	9.47970	7.82860	42	6.77990	3.97133	1.70721	1.277327
Pz Cussons	2016	2.86130	5.49760	5.28220	7.87170	43	6.66800	3.97433	1.67777	1.255615
Pz Cussons	2017	4.09220	5.46990	2.86810	7.95470	44	6.61640	3.97733	1.66353	1.245275
Pz Cussons	2018	2.17470	5.40970	2.84980	7.94750	45	6.56830	3.98033	1.65019	1.235603
Pz Cussons	2019	1.44600	5.41700	-333.64990	7.90270	46	6.58550	3.98333	1.65326	1.238218
Unilever Nig	2010	16.11910	5.23690	12.34610	7.41380	38	6.69340	4.10633	1.63002	1.233066
Unilever Nig	2011	17.10150	5.31900	11.54450	7.50850	39	6.74870	4.10933	1.64229	1.242638
Unilever Nig	2012	15.33690	5.36500	11.29260	7.56230	40	6.74740	4.11233	1.64077	1.241784
Unilever Nig	2013	10.98620	5.44430	13.61140	7.64100	41	6.78150	4.11533	1.64786	1.247442
Unilever Nig	2014	5.27450	5.44230	13.99390	7.66030	42	6.72830	4.11833	1.63374	1.237043
Unilever Nig	2015	2.37650	5.41630	14.89180	7.70050	43	6.68830	4.12133	1.62285	1.229081
Unilever Nig	2016	4.23760	5.48610	10.05360	7.86030	44	6.66950	4.12433	1.61711	1.22502
Unilever Nig	2017	6.15280	5.59840	7.00390	8.08310	45	6.67320	4.12733	1.61683	1.225093
Unilever Nig	2018	6.92650	5.58220	4.46500	8.12010	46	6.63020	4.13033	1.60525	1.216598
Unilever Nig	2019	-7.15650	5.53000	2.25800	8.01570	47	6.49590	4.13333	1.57159	1.191366
Vitafoam Nig	2010	8.64070	4.59760	5.96120	6.77460	33	6.04930	4.16633	1.45195	1.103453
Vitafoam Nig	2011	5.58340	4.77870	9.01570	6.96810	34	6.17250	4.16933	1.48045	1.125371
Vitafoam Nig	2012	4.81710	4.82070	8.01180	7.01800	35	6.16350	4.17233	1.47723	1.123177
Vitafoam Nig	2013	4.11920	4.80160	11.05100	6.99830	36	6.21650	4.17533	1.48886	1.132278
Vitafoam Nig	2014	3.63570	4.86050	11.11560	7.07850	37	6.20500	4.17833	1.48504	1.129627
Vitafoam Nig	2015	1.71820	4.87700	15.79840	7.16120	38	6.15100	4.18133	1.47106	1.119245
Vitafoam Nig	2016	-0.24000	4.75110	13.94820	7.12530	39	5.95840	4.18433	1.42398	1.083666
Vitafoam Nig	2017	-0.95220	4.64270	10.75810	7.12750	40	5.96310	4.18733	1.42408	1.083988
Vitafoam Nig	2018	3.75360	4.66730	20.93590	7.20510	41	5.95300	4.19033	1.42065	1.08162
Vitafoam Nig	2019	17.83230	4.65480	19.49430	7.14060	42	6.06230	4.19333	1.44570	1.100938

Source: Annual report of sampled firms, (2010-2019)