



# Effect of Intangible Assets on Performance of Quoted Companies in Nigeria

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## ABSTRACT

This work examined the effect of intangible assets on performance of quoted companies in Nigeria using time series data from 2008 to 2017. Relevant conceptual, theoretical and empirical literatures were examined. The study is anchored on signaling theory and agency theory. Ex post facto research design was employed. Five firms from different sectors of the economy were sampled. The data used in this study were sourced from annual reports and statement of accounts of the selected firms. Employee benefit expenses, research and development cost and goodwill were employed as the independent variable while return on capital employed was employed as the dependent variable. Descriptive statistics, correlation analysis and ordinary least Square regression were employed in analyzing the data. The study also found that employee benefit expenses has no significant effect on return on capital employed of quoted companies in Nigeria. The study further found that research and development cost has a significant effect on return on capital employed of quoted companies in Nigeria. Finally the study revealed that goodwill has a significant effect on return on capital employed of quoted companies in Nigeria. Based on the foregoing, the study concludes that intangible assets have significant effect on performance of quoted companies in Nigeria. The study recommends that management should have positive disposition towards intangible assets disclosure in order to project the real value of intangible assets in their organization.

**Keywords:** Intangible Assets, Performance

## INTRODUCTION

The Nigeria economy is fast growing with firms and organizations struggling to survive and keep up with the high competition in their industries. Economists consider that the main feature of this new economic environment is the essential role played by intangibles as a fundamental determinant of value creation of business companies (Meritum, 2001). Intangible assets have become the focus of companies, financial analysts, investors, accountants, and regulations alike in recent time and this has initiated attempts to understand and narrow the gap between companies' book and market value (Barton, 2005). In the information era where intangible asset is the most important and considered as having economic value that drives the profitability and sustainability of a company, the disclosure of such asset/ resource is crucial (Madinios, Chatzoudes, Tsairidis & Theriou, 2011).

The objective of preparing a company's financial statement is to make known the company's performance to the various stakeholders which includes shareholders, creditors, staff, regulators etc. Specifically, it provides information about a company's financial performance, financial position, and cash flows (Krstić & Đorđević, 2010). However, if the financial statement must effectively meet this objective, it must

provide adequate information that relates to the various items or components (capital and recurrent) of the final accounts. Also, it is observed that firms and organizations in Nigeria prepare financial statements at the end of their accounting year or any period usually yearly i.e. twelve (12) months. In preparing these financial statements, assets and liabilities are reported at their net book values (how fair values based on IFRS provision) to determine the financial performance and position of the firm and ultimately, the net worth of the business. However, one vital aspect of these financial reporting which is unduly neglected in the statement of financial position is the reporting of intangible assets.

It is important to note that in the last few decades, business activities has “progressively moved into a knowledge-based, fast-changing and technology intensive economy in which investments in human resources, information technology, research and development, and advertising have become essential in order to maintain the firm's competitive position and ensure its future viability” (Leandro, García-Ayuso & Sánchez, 2000). Therefore, the source of economic value and wealth is no longer the production of material goods but the creation and manipulation of intangible assets. This is often referred to as earnings management. In this scenario, firms feel a growing need to make investments in intangibles on which the future success of the company is based, but that in most cases these investments are not reflected in the statement of financial position due to the existence of very restrictive accounting criteria for the recognition of assets and their valuation. Based on the above, it is evident that intangible assets are both large and important, however, current financial statements provide very little or no information about these assets (Lev, 2003), as a result, financial statements are incomplete; with users of the information not having accurate and complete knowledge about the intangibles owned and managed by a firm. Dutz, Kannebley, Scarpelli & Sharma (2012) opine that a common findings in literature is the overwhelming importance attached to intangibles and any attempt to ignore them in financial reporting will lead to distortions and incomplete performance measurement.

The issue of value relevance of intangibles is gaining grounds in the financial reporting literature due to the ever increasing interest in the components of intangible assets items including goodwill and intellectual capital (Shukor et al, 2008). Intangible assets are simply a set of knowledge, information, intellectual property, goodwill and expertise which can be used for the purpose of creating wealth (Stewart, 1997). Business enterprises are nowadays feeling a growing need to undertake important investments in their human resources, new technology, research and development and advertising, in order to pursue new process and product innovation as well as to develop and maintain their broader capabilities to assimilate and exploit externally available information. Thus, intangible investments currently appear to be one of the fundamental concerns of business enterprises willing to develop (or maintain) a competitive advantage (Leandro, García-Ayuso & Sánchez, 2000). Intangible investments are mainly intended to acquire future earning power, and as such, may be considered as assets susceptible of recognition and disclosure in financial statements. The economic rationale underlying the classification of an intangible investment as an asset lies in its potential for the generation of future profits. From this purely economic point of view, there is no theoretical basis upon which a clear distinction may be made between intangible and tangible assets, as both represent future economic benefits for the firm, resulting from past transactions or events. However, according to the regulations issued by most accounting standard setting bodies in the world, most intangible investments (although contributing to generate future income) are not reflected in the statement of financial position but immediately expensed in the income statement. Therefore, financial statements fail to provide a true and fair view of the firm's (nonphysical) position. IFRS disclosure requires a disclosure of goodwill and to be measured annually for impairment. This is a step in the right direction.

With the increasing awareness of the importance of intangible assets, many managers attempt to disclose the intangible assets of their companies in the annual reports on a voluntary basis to reduce information asymmetry and improve transparency between management and the stakeholders (Holland, 2009). However, intangible assets are difficult to measure, because there is no consensus to its measurement approach and acceptable accounting framework for its disclosure globally (Salman & Tayib, 2012). Thus, the intangible assets disclosure pattern among companies, throughout the world, is limited and significantly different. The central issues in recognition are the judgment of what the probable future

economic benefits are and to what extent they are controlled by the firm. The FASB [1985a] states that probable refers to what can be reasonably expected or believed on the basis of logical evidence. Therefore, if there is a reasonable expectation that an investment in an intangible element will generate future economic benefits controlled by the firm, it should be recognized as an (intangible) asset and reported in the financial statements. Control of the probable future benefits arising from the intangible investment is considered by most accounting standard setting bodies as a basic requisite for recognition. Therefore, this study examines effect of intangible assets disclosure on performance of quoted companies in Nigeria.

The specific objective include to:

1. Investigate the degree to which employee benefit expenses affects return on capital employed of quoted companies in Nigeria.
2. Ascertain the degree to which research and development cost affect return on capital employed of quoted companies in Nigeria.
3. Determine the extent to which goodwill affect return on capital employed of quoted companies in Nigeria.

### **LITERATURE REVIEW**

The debate on the recognition of intangibles is upcoming and heated. According to Zeghal and Maaloul (2011), the lack of recognition of intangibles has affected the value-relevance of financial information. As such, if financial statements must become value relevant in this modern time, recognition of intangibles in the statements must be of essence. Similarly, (Kampanje, 2012) asserts that the increasing importance of intangibles can be attributed to information age, an age where information is what drives performance and not just the possession of physical assets. He further noted that businesses are being challenged by the rapid industrialization and globalization to develop and acquire intangible assets as a survival strategy and means of gaining competitive advantage amidst the dynamic business environment. Thus, the significance of intangible assets as well as its appropriate recognition and measurement for the purpose of adequate financial reporting is of paramount necessity. Furthermore, (Lee, 2010) asserts that a measure aimed at improving financial reporting is the adoption of fair value estimates in the measurement of intangibles. Thus, the understanding of the concept of intangibles is of immense importance. Definitions of intangible assets seem to draw from the definition as given by the International Accounting Standard Board.

A standard universally acceptable definition of intangible assets appears not to have emerged yet. Intangible asset is typically described as good/asset without physical existence but has economic value (Gerpoth, Thomas and Hoffman, 2008). Intangible assets are otherwise called Intellectual capital or knowledge assets (Lev, 2001). Until now, a standard definition of intangible assets has not been arrived at because scholars define it in accordance with the way they perceive it (Madininos, et al. 2011). It is against this background that Lev (2001) defines intellectual capital/assets as “a claim to future benefit that does not have a physical or financial (a stock or a bond) embodiment.” Some have defined it by its drivers. For example Gu and Lev (2001) describe this set of assets as research and development (R&D), Advertising, information technology (IT) and Human Resource.

NASE 31, also tow the same line of definition as IAS 38. The classes of intangible asset based on NAB 31 include; brand names, masthead and publishing, computer software, license and franchises, copyrights, patents and industrial property rights, services and operating rights, recipes, formulae, models, designs and prototypes, intangible assets under development. (Collings, 2011) in his review opine intangible assets to comprise assets such as licenses and quotas, patents and copyrights, computer software, trademarks, franchises, and marketing rights. Still on the types of intangibles, Wyatt and Abenethy (2003) tend to focus on four broad classifications of intangibles: acquired intangible assets- this includes acquired identifiable intangible assets (IIA) such as acquired patents and trademarks, brands, and purchased goodwill that is acquired in business combinations; research and development (R&D)- this includes expenditures associated with R&D activities performed within the firm. Expenditures for exploration, evaluation and development costs in mining and other resource-based firms are usually accounted for separately to R&D because of the specific risk profile of these expenditures; internally

generated intangible assets (IGI)- this includes identifiable intangible assets produced by the firm, and internal goodwill that is not easily attributable as to its source of value. Identifiable intangible assets and internal goodwill relate to such things as the firm's information systems, its administrative structures and processes, market and technology knowledge, trade secrets, customer and supplier networks; intellectual property- these are a sub-set of acquired and internally generated intangible asset classifications that have legal or contractual rights (i.e. patents, trademarks, designs, licenses, copyrights, firm rights, mastheads). The most important part of an organization is the performance, where performance is viewed as the success of an organization in achieving valuable outcomes, such as high returns (Memon & Tahir, 2012). Based on Smith & Reece (1999), performance is defined as "the organization's ability to meet the desire result as determined by the company's major shareholders". On the other hand, it is to determine whether the actual output of an organization is as what has been targeted (AlQudah *et al.*, 2014). Thus, to achieve high business performance, organizations need to attain and sustain competitive advantages. For this reason, many researchers had argued that strategic planning makes organizations have competitive advantages and the ability to stay in business against competitors. They need to know the correct performance level is important due to it enable the organization to determine its current position and find ways to improve business if necessary. Consequently, the measurement of business performance has captured the attention of many scholars due to its complexity (Matsoso & Benedict, 2014). Different researchers have different ways to measure performance. Mandy (2014) summarized in his review that "the best way to evaluate performance is by effectiveness, growth and productivity, efficiency, individual employee sales, the value of exports, organization total assets and operation profit ratio as a measurement". Researcher such as Arshada *et al.* (2014) measured performance using financial indicator. Financial measure is done by measuring the sales, market share, number of employees, return on capital employed, inventory turnover, return on investment, growth and profits. In this study, return on capita employed was employed as the measure of performance. Empirical evidence reveals conflicting findings. For instance, Corrado *et al.* (2006) found that disclosure of intangible assets is positively related to corporate performance. Garcia-Meca *et al.* (2005) found that on the average, earning forecasts and profitability are positively and significantly associated with voluntary disclosure of intangible assets, including the components of intellectual capital. Syed (2009) study indicates that companies with higher profitability intended to disclose more HRA information. Mgbame, Otuya and Ovie (2013) found that a positive relationship exists between the financial performance of a company and its level of Human Resource Accounting Disclosure (HRAD). Syed (2009) found that Human resources accounting disclosure was found to be significantly related with profitability. Furthermore, Micah, Ofurum and Ihendinihu (2012) found positive correlation between Return on Equity (ROE) and Human Resource Accounting Disclosure. On the contrary, Williams (2001) found a statistically significant inverse relationship between the level of a firm's intellectual capital disclosure and its level of performance. Izedonme, Odeyile and Kuegbe (2013) found that human capital and intangible asset had an insignificant impact on organizational performance. Also, Alade (2013) found that firm's profitability proxied by net profit margin was statistically insignificant and positively associated with the probability for a firm to disclose intangible assets in financial reports. The empirical evidence reveal conflicting findings and the timeframes considered in these studies were short resulting to knowledge gap in literature. Also, majority of the studies of intangible assets disclosure were done outside Nigeria, and the few studies in Nigeria used firm specific data instead of industry wide data. This warrants a more systematic and comprehensive study. This study will improve on the previous studies by making use of broad data set which is more than those used in the previous studies.

## **METHODOLOGY**

The study builds on existing research studies and methodologies and uses ex-post facto research design. Data from secondary sources were employed in this study. The data covered the period of five years from 2013 to 2017. Data were sourced on return on capital employed, employee benefit expenses, research and development cost and goodwill. Purposive sampling method was used in selecting five companies for this study. The companies selected cut across the diverse sector of the Nigerian Economy. The companies

selected include: First Bank of Nigeria Plc representing the financial sector; Nestle Nigeria Plc representing the consumer goods sector; Total Nigeria Plc representing the oil and gas sector; Nigerian Wire And Cable Plc representing the industrial goods sector; and May and Baker Nigeria Plc representing the health sector.

A linear regression model is specified. This model is a modification on the model adopted by Hanran and Wenshu (2014). The model will be expressed in functional and econometric forms. The functional form of the regression model is represented as:

$$ROCE = f(\text{EBE}, \text{RDC}, \text{GW})$$

Where:

ROCE = Return on Capital Employed

EBE = Employee Benefit Expenses

RDC = Research and Development Cost

GW = Goodwill

The Regression Model can be restated in econometric form as:

$$ROCE = \alpha_0 + \beta_1 \text{EBE} + \beta_2 \text{RDC} + \beta_3 \text{GW} + \epsilon \quad (1)$$

Where

$\alpha$  = Constant Term

$\beta$  = Beta coefficients

ROCE = Return on Capital Employed

EBE = Employee Benefit Expenses

RDC = Research and Development Cost

GW = Goodwill

$\epsilon$  = Error Term

The regression model is restated in log form as

$$ROCE = \alpha_0 + \beta_1 \text{LEBE} + \beta_2 \text{LRDC} + \beta_3 \text{LGW} + \epsilon \quad (2)$$

Where

L = Logged form of the variables

First of all, the data generated will be subjected to descriptive statistics which analyze the individual characteristics of the variables used in the study; thereafter correlation analysis was run in order to determine the extent of association and presence or otherwise of multi-collinearity. In this work, the estimate technique used is Ordinary Least Square (OLS), which would be engaged to establish the existence of relationship through the application of the econometric software (E-view). The choice of the estimation procedure (OLS) was as a result of its advantage over other method or technique which is preferred given us desirable properties of unbiased, consistency, efficiency, sufficiency, best, linear, (Gujarati, 2004. 79), the technique also has computation simplicity.

## **DATA PRESENTATION AND ANALYSIS**

### **Descriptive Statistics**

The descriptive statistics reveals the individual characteristics of the variables used in this study highlighting their median, mean, maximum and minimum values, standard deviation, skewness, kurtosis, Jarque-Bera and probability.

**Table 1 Result of the Descriptive Statistics**

	<b>ROCE</b>	<b>EBE</b>	<b>RDC</b>	<b>GW</b>
Mean	0.361800	97748.78	538.0800	0.880000
Median	0.265000	63597.50	599.0000	1.000000
Maximum	1.400000	406992.0	980.0000	1.000000
Minimum	0.040000	1776.000	151.0000	0.000000
Std. Dev.	0.314660	107769.5	251.8083	0.328261
Skewness	1.710262	1.314530	-0.056023	-2.338738
Kurtosis	5.408269	3.903729	1.781372	6.469697
Jarque-Bera	36.45780	16.10143	3.120017	70.66164
Probability	0.000000	0.000319	0.000134	0.000000
Sum	18.09000	4887439.	26904.00	44.00000
Sum Sq. Dev.	4.851538	5.69E+11	3106964.	5.280000
Observations	50	50	50	50

Source: E-View 8.0

Table 4.1 above shows that return on capital employed, employee benefit expenses, research and development cost and goodwill recorded means values of 0.36, 7926.1, 538.1 and 0.9 with a standard deviation of 0.315, 17653.55, 251.8 and 0.328 respectively. The JB values for all the variables are higher and their respective corresponding probability values are less than 0.05 level of significance. The result shows that all the variables are normally distributed and the variables are suitable for the conducting of the analysis. Hence, we reject the null hypothesis which states that the data series are not normally distributed.

#### **Correlation Analysis**

This was used to check the extent of association between the variables used in the study and if multicollinearity exists among the explanatory variables. This is because the presence of multicollinearity in a set of data forces the standard error to go up, and then in reverse, forces the t-statistics to be low. The result is presented in table 2 below.

**Table 2 Correlation Matrix**

	<b>ROCE</b>	<b>EBE</b>	<b>RDC</b>	<b>GW</b>
ROCE	1.000000			
EBE	-0.130233	1.000000		
RDC	0.550924	-0.366439	1.000000	
GW	0.223424	0.170014	-0.118886	1.000000

Sources: E-view 8.0

Table 4.2 above indicates that all the variables with the exception of employee benefit expenses (EBE) are positively correlated with return on capital employed. The table further indicates that employee benefit expenses (EBE) and goodwill (GW) has a weak correlation with return on capital employed while research and development cost (RDC) has a strong correlation with return on capital employed. In checking for multi-collinearity, the study noticed from the correlation table that no two explanatory variables were perfectly correlated. This indicates the absence of multi-collinearity problem in the model used for the analysis. This also justifies the use of the ordinary least square.

**Regression Result**

The results of the ordinary least regression analysis are presented below.

**Table 3 Ordinary Least Square Result**

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.097768	0.181351	3.539108	0.0000
EBE	-1.439107	4.983407	-0.286652	0.7757
RDC	0.000428	0.000197	2.179145	0.0346
GW	0.284167	0.133079	2.135319	0.0382
R-squared	0.776530	Mean dependent var		0.361800
Adjusted R-squared	0.703333	S.D. dependent var		0.314660
S.E. of regression	0.297960	Akaike info criterion		0.510921
Sum squared resid	3.995094	Schwarz criterion		0.702123
Log likelihood	-7.773030	Hannan-Quinn criter.		0.583732
F-statistic	24.11706	Durbin-Watson stat		1.848327
Prob(F-statistic)	0.002892			

Sources: E-view 8.0

Based on t-statistics of 0.286652 and p-value of 0.7757, employee benefit expenses (EBE) was found to have an insignificant effect on return on capital employed (ROCE). This implies that employee benefit expenses has no significant effect on return on capital employed of quoted companies in Nigeria. Research and development cost recorded t-statistics of 2.179145 and p-value of 0.0346, research and development cost was found to have a significant effect on return on capital employed (ROCE). Goodwill recorded t-statistics value of 2.135319 and p-value of 0.0382, goodwill (GW) was found to have a significant effect on return on capital employed (ROCE) of the sampled quoted companies.

**DISCUSSION OF FINDINGS**

This work examined the effect of intangible assets on performance of quoted companies in Nigeria using time series data from 2008 to 2017. The data used in this study were subjected to some pre-diagnostic test such as descriptive statistics and correlation analysis. Finally Ordinary least Square regression method was used as the estimation technique. The study found that employee benefit expenses has no significant effect on return on capital employed of quoted companies in Nigeria. This disagrees with the findings of the findings of Olayinka and Olayiwola (2016) that salaries and wages exerts a positive and significant impact on corporate earnings. It is also in line with the findings of Ezejiolor, John-Akamelu and Iyidiobi (2016) that increase in staff salary has contributed positively on organizational profitability.

The study further found that research and development cost has a significant effect on return on capital employed of quoted companies in Nigeria. This disagrees with the findings of Ramat et al (2012) and Shafiu et al (2017) that intellectual capital has a significant impact on return on capital employed. Finally the study revealed that goodwill has a significant effect on return on capital employed of quoted companies in Nigeria. This agrees with the findings of Raissa (2015) that intangible assets have significant relationship with net profit margin.

**CONCLUSION AND RECOMMENDATIONS**

This work examined the effect of intangible assets on performance of quoted companies in Nigeria using time series data from 2008 to 2017. The study found that employee benefit expenses has no significant effect on return on capital employed of quoted companies in Nigeria. The study further found that research and development cost has a significant effect on return on capital employed of quoted companies in Nigeria. Finally, goodwill was found to have significant effect on return on capital employed of quoted

companies in Nigeria. Based on the foregoing, the study concludes that intangible assets have a significant effect on performance of quoted companies in Nigeria.

Based on the findings, the study recommends that management should have positive disposition towards intangible assets disclosure in order to project the real value of intangible assets in their organization. Moreover, since business operations of most of the companies in Nigeria are averagely based on intangible asset, it is better to report all the intellectual capital so that the investors will know how their resources are being utilized as well as the total value of their investments at every point in time. Also, firms should adopt uniform reporting and disclosure standards of intangible assets for the purpose of control and measurement of performance.

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