

INTANGIBLES ACCOUNTING ESTIMATES AND PERFORMANCE OF LISTED FINANCIAL SECTOR FIRMS IN NIGERIA

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ABSTRACT

This paper examined the relationship between intangible assets and financial performance of listed firms in Nigeria. Specifically, the study sought to determine the extent estimates of intangible assets have influenced the firms' return on assets, return on equity, and earnings per share, using the Least fixed effect panel regression model. Data was collected from the published annual financial statements of 20 financial firms – 10 banks and 10 insurance companies – for the period from 2013 to 2023. The results reveal that intangibles estimate exert a significant positive influence on all the performance proxies of the selected banks and insurance companies. We conclude that intangible assets estimates have a substantial impact on firm performance. Thus, the study recommends that the management of banks and insurance companies should ensure that efforts are geared towards maintaining and improving on their intangible assets. Again, it was recommended that bank management, without compromising the quality of service delivery, should ensure that they do not over invest in information technology as such investments may only increase operational costs; which may lead to a decline in profitability.

Keywords: Intangible assets, accounting estimates, firm performance, return on assets, return on equity earnings per share

JEL Classification Code: M41, L25

1. INTRODUCTION

The strategic role of the financial services sector in economic enhancement and sustainability cannot be over emphasized. They drive the achievement of sustained economic growth and development by providing efficient financial intermediation, for the economy to function. The financial sector is made up of firms and institutions such as, banks, investment companies and insurance companies, that provide financial services to commercial and retail customers. Among these, banks and insurance firms (which are the main players of the financial sector) promote investment by mobilizing savings and efficiently channeling the same to fund productive business opportunities. But the efficient functioning of these financial institutions is hinged on the effective management of their assets and liabilities, many of which cannot be estimated precisely.

Until recently, most financial sector firms (mainly made up of banks and insurance companies) placed less emphasis on intangible non-current assets as core to the firm's financial position (Nangih et al., 2020). But today, with the increasingly knowledge-driven world economy, intangible assets and its valuation now constitute a very important aspect of financial reporting for many companies in many countries. Today, banks and insurance companies employ various softwares and other information technology-driven platforms to enhance their operations and to grow their businesses. Accordingly, investments in intangible assets are now seen as very crucial in the growth and expansion of their branches as well as profit. It is for that reason and others that the Financial Reporting Council of Nigeria made it compulsory for firms to disclose software costs and other intangibles in financial statements to make it more relevant and to faithfully represent the underlying circumstances of their financial transactions in Nigeria (KPMG, 2015).

Intangible assets affect the firm's core competitive competence. Marrocu et al. (2012) stated that in the most advanced developed industrial economies, there is a strong relationship between economic performance and intangible assets. Tsai et al. (2012) opined that intangible assets represent the future growth potentials that helps to increase firm value. A company with a higher profitability ratio is considered to be doing better than its competitors. Erawati and Sudana (2005) stated that intangible assets greatly affect the firm's entity's performance which is reflected in firm's returns. Examples of intangible assets include asset classes such as brand names, computer software, licenses and franchises, copyrights, patents and other industrial property rights, recipes, goodwill, etc. They are the companies' competitive advantage, which is hard to imitate. But Andonova and Ruiz-Pava (2016) had stated that the mechanisms to establish sustainable competitive advantage based on intangible assets might be absent in emerging countries.

In Nigeria, the financial sector, within the last few decades, has being bedeviled by a myriad of distress and corporate failures, which have raised concerns about the quality of financial reports and equally undermined investors' trust regarding accounting output. Whether or not the sector has leveraged on the advantages derivable from intangible assets remains a mystery. Shockingly, the Nigerian Deposit Insurance Corporation has liquidated a total of fifty-three (53) deposit money banks as well as some insurance companies between 1994 and 2018 (NDIC, 2023). Smith and Walter (1997) noted that the failure of financial firms has adverse effect on the economy, and frequently has its roots traced to problems bothering on financial disclosures, especially relating to certain assets that may be bloated in the financial statements to boost earnings and to paint an attractive performance outlook to investors.

To this end, the estimation of intangible assets and its probable impact on firm performance still remains a challenge of financial institutions and its regulators. While it is believed that intangible assets and firm performance should have a positive correlation, there has been contradictory results when it comes to the impact of intangibles assets on firm profitability in the literature. As a result, the interconnectedness between investment in intangibles and firm performance is a topic that has generated a lot of controversies among financial researchers and managers alike. While many studies have been carried out across different sectors and spanning across jurisdictions, studies that focused on the effect of intangible non-current assets on the profitability of companies in the financial sector in Nigeria are very scanty. Where they exist at all, their results are very contradictory. That constitutes a knowledge gap and forms our point of departure from prior studies. Thus, this study specifically examines the effect of intangible assets estimates on the performance of listed financial firms in Nigeria, in a bid to lend our voices to the controversies as well as contribute to literature on the subject matter.

2. LITERATURE REVIEW

2.1 Conceptual Review

Intangible Assets

Assets can be majorly classified into tangible and intangible assets. As opined by Epstein and Mirza (2005), intangible assets are nonfinancial assets without physical substance that are held for use in the production or supply of goods or services or for rental to others, or for administrative purposes; which are identifiable and are controlled by the enterprise as a result of past events, and from which future economic benefits are expected to flow. While tangible assets are resources under the control of the entity that can be physically seen and touched, intangible assets do not normally have physical substance. Some examples of

intangible assets are: development costs, goodwill, trademarks, licenses, brand names, patents, copyrights, and franchises, etc. Intangibles can be purchased or internally generated without necessarily incurring expenditure. Those purchased are usually capitalized while those internally generated, such as goodwill may not be capitalized.

In order for an intangible asset to be recognized, it must be identifiable. An intangible asset that is identifiable should either be separable or arise from contractual or other legal rights. As noted by Chukwu et al. (2017), one of the important features of intangible assets that qualify for recognition is that the entity expects to receive future economic benefits from its use. However, Barron et al. (2002) observed that there is a high degree of uncertainty regarding the value of future economic benefits the organization may derive from the use of intangible assets it controls. Accounting for intangible noncurrent assets is governed by the provisions of International Accounting Standard 38 (Intangible non-current assets). According to International Accounting Standards 38, intangible asset is defined as an identifiable non-monetary asset that does not have physical substance.

In many cases, the value may be anywhere near zero and a very high accounting amount. Another complication is that there is a wide range of assets that may be classified as intangible assets under IAS 38. Godfrey et al (2010) posits that accounting practice in relation to valuing and recognizing intangible assets is essentially conservative. This is probably because of uniqueness of each intangible asset and the absence of relevant price indices (Barron et al., 2002). Zhang (2017) posits that intangible assets reflect core competitive competences of companies. By their nature, all intangible assets valuations are done by way of approximations. For example, goodwill valuation, patents, copyrights, and all other intangibles assets are usually measured and recognized in financial statements using approximated figures or values.

Firm Performance

Firm performance measures an organization's earnings, profits, appreciation in value as shown by the increase in the entity's worthiness in the market (Nangih et al., 2020). Private sector business are mostly driven by profitability and/or shareholders' wealth maximization - both of which measure financial performance. It can also be seen as a 'composite word' used to describe the totality of organization's financial status, and its capability to meet its short and long-term financial obligations and its commitment to provide efficient services in a foreseeable future (Weber, 2008). In many studies, financial performance is usually expressed using a wide range of ratios, such as, return on assets, return on equity, return on investment, return on capital employed, and others of the sort.

In this paper, return on assets, return on equity and earnings per share will be employed as measures of firm performance.

2.2. Theoretical Review

This study was anchored on the Signaling Theory, founded by Michael Spence in 1973. Actors within organizations commonly must make choices armed with incomplete and asymmetrically distributed information. Signaling Theory seeks to explain how individuals are able to do so. This theory's primary predictive mechanism is 'separating equilibrium,' which occurs when a signal's expectations are confirmed through experience. The theory is also useful for describing behavior when two parties (individuals or organizations) have access to different information. Typically, one party, the sender, must choose whether and how to communicate (or signal) that information, and the other party, the receiver, must choose how to interpret the signal. Accordingly, Signaling Theory holds a prominent position in a variety of management literatures, including strategic management, entrepreneurship, and human resource management.

While the use of signaling theory has gained momentum in recent years, its central tenets have become blurred as it has been applied to organizational concerns. The fundamental concern of Signaling Theory is to resolve information asymmetry between two parties (Spence, 2002). Spence (2002) He proposed that where information asymmetry exists, it is always possible for people to signal their type, ability and capability, thus invariably transferring information to the other party and resolving the asymmetry.

The relevance of the Signaling Theory to this study is that sometimes financial statements are assumed to be creative - resulting to the problem of information asymmetry. Hence, users would require a transparent and reliable financial that truly shows a true and fair view of the entity's financial performance and position in order to make sound and rational financial investment decisions.

2.3. Empirical Review

Quite a handful of empirical studies that attempt to demystify the intangible asset-firm performance nexus exist. Qureshi and Siddiqui (2020) investigated the degree to which intangible assets affect financial performance, financial policies and market value of technological firms using the structural equation modeling (SEM). Using 80 companies based on market capitalization in their respective countries between 2015 and 2018, it was found that there was significant impact of assets on financial performance.

Nangih et al. (2020) examined the relationship between intangible non-current assets investment and profitability, using Guaranty Trust Bank Plc as a case study. Data was collected from the banks' annual financial statements for the period 2009 to 2019. Using the least multiple regression technique, their study showed that neither goodwill nor computer software costs significantly influenced Return on Equity, concluding that intangible assets do not significantly enhance financial performance of banks.

Ferreira (2018) aims to identify the impact of different intangibles on the performance and profitability of 25 major technological companies in the world, for a four-year period, 2014–2017. The study used Pearson's correlation coefficients, and multiple linear regression models to assess the relationship. They established that the most significant contribution to performance arises from software and research and development (R&D) expenses, which underline the crucial role of innovation capital in the sector. Similarly, Chukwu and Egbuhuzor (2017) investigated the effect of tangible assets on the corporate performance of manufacturing firms in Nigeria. The results of their multiple regression analysis reveal a significant positive relationship between return on assets and plant and machinery; but the relationship between return on assets and land and buildings was negative.

Chukwu et al. (2017) examined the influence of intangible assets on market value of quoted money deposit banks in Nigeria, specifically estimating the effects of goodwill and software costs on the Earnings Per Share of quoted banks. The results revealed that computer software costs were not significantly related to market value while goodwill arising from business combination was positively related to market performance. Zhang (2017) investigated the nexus between degree of intangibles and firm profitability. Using 17 listed telecommunication companies' financial statements in China between 2014 and 2016, the study found empirical evidence that intangible assets had positive and significant relationship with firms' financial performance, proxied by Return on Assets (ROA).

Nnado and Ozouli (2016) carried out a study to ascertain the impact of total intangible assets on the financial performance of manufacturing firms publicly listed on the Nigerian Stock Exchange (NSE) using secondary data collected and collated from 46 manufacturing firms' audited annual reports. Employing the Prais Winsten Regression Correlated Panels Corrected Standard Errors (PCSEs), they found the existence of a strong negative relationship between Economic Value Added (EVA) and Intangible Assets but on the other hand, a perfect positive relationship between EVA and ROA. Bubic and Susak (2015) studied the relationship between investment in intangible assets represented by

intangible assets to total assets ratio and financial performance. It was discovered that intangible assets affected financial performance significantly.

Gamayuni, (2015) used Path analysis to ascertain the relationship between intangible assets, financial policies, financial performance, and firm value at going-public company in Indonesia for the period 2007 to 2009. The study provided empirical evidence that Intangible assets, financial policies, financial performance have significant influence on the firm value simultaneously. Intangible asset has no significant influence on financial policies, but has positive and significant influence on financial performance (ROA) and firm value. Abubakar and Abubakar (2015) also investigated the influence of intangibles on market value of listed firms in Nigeria. Correlational design was used. Data collected from 30 high- tech companies was analyzed using regression. The study revealed an association between brands and market value.

3. METHODOLOGY

In carrying out this study, the quasi-experimental and cross-sectional research designs were adopted in the quest to investigate the effect of intangibles approximations on listed financial firms' performance in Nigeria. The population for the study consists presently of 43 firms, which are all listed on the Nigerian Stock Exchange. However, due to data availability, adequacy and consistency, 20 financial companies, made up of 10 banks and 10 insurance companies where selected. More so, these firms make up over 70% of the total assets of the financial sector listed firms. The study also drew its data from the annual published financial statements of the selected firms, which has a periodic scope of 11 years from 2013 to 2023. The models for the study followed the approach of Nangih et al. (2020), though with some modifications; as stated thus:

$$ROA = f(INTGB, FSIZE) \quad (1)$$

$$ROE = f(INTGB, FSIZE) \quad (2)$$

$$EPS = f(INTGB, FSIZE) \quad (3)$$

These are further expressed in their econometric forms as:

$$ROA = \alpha_0 + \alpha_1 INTGB_{it} + \alpha_2 FSIZE_{it} + \varepsilon_{ti} \quad (4)$$

$$ROE = \beta_0 + \beta_1 INTGB_{it} + \beta_2 FSIZE_{it} + \varepsilon_{ti} \quad (5)$$

$$EPS = \delta_0 + \delta_1 INTGB_{it} + \delta_2 FSIZE_{it} + \varepsilon_{ti} \quad (6)$$

Where ROA = return on assets, ROE = return on equity, EPS = earnings per share, INTGB = intangible assets estimate, FSIZE = firm size, $\alpha_0, \beta_0, \delta_0$ = intercepts, $\alpha_1 - \alpha_2, \beta_1 - \beta_2, \delta_1 - \delta_2$ = coefficients of the regression, and ε_{ti} = error terms. Subscripts i and t represent firm

and period, respectively. The models were estimated using the fixed/random effects panel regression model. The decision rule is to reject the null hypothesis if the probability value of the t-statistic is less than 0.05; otherwise it cannot be rejected. A priori expectations: $FSIZE > 0$. The measurement of the variables and their a priori expectation are presented in Table 3.1.

Table 3.1 Operational Measure of Variables/A Priori Expectation

S/No	Variable	Description	Type	Definition
1	ROA	Return on Assets	Dependent	$\frac{\text{Profit after tax}}{\text{Total Assets}} \times 100$
2	ROE	Return on Equity	Dependent	$\frac{\text{Profit after tax}}{\text{Total Equity}} \times 100$
3	EPS	Earnings per Share	Dependent	$\frac{\text{Profit after tax}}{\text{Total Number of Ordinary Shares}} \times 100$
4	INTGB	Intangible Assets	Independent	$\frac{\text{Intangible Assets}}{\text{Total Assets}} \times 100$
5	FSIZE	Firm Size	Control	Natural Logarithm of Total Assets

Source: Authors' Compilation

4. RESULTS AND DISCUSSION OF FINDINGS

The results of the data analyses are presented and discussed in this subsection.

Table 4.1: Descriptive Statistics

	INTGB	FSIZE	ROA	ROE	EPS
Mean	0.455710	26.39713	2.889740	13.11323	1.297955
Median	0.232998	26.71266	2.304450	11.55711	0.405000
Maximum	4.308164	30.65869	20.06069	122.0471	18.97000
Minimum	0.000000	22.53352	-12.27590	-41.22014	-5.450000
Std. Dev.	0.669177	2.326947	4.215980	14.49523	2.443532
Skewness	3.308929	0.024934	0.305977	2.056479	3.658764
Kurtosis	16.06624	1.492437	7.298498	19.17645	22.96760
Jarque-Bera	1966.458	20.85630	172.8061	2553.778	4145.637
Probability	0.000000	0.000030	0.000000	0.000000	0.000000
Sum	100.2563	5807.369	635.7429	2884.911	285.5500
Sum Sq. Dev.	98.06768	1185.816	3892.612	46014.44	1307.616
Observations	220	220	220	220	220

Source: Authors' Computation

The results in Table 4.1 indicate that INTGB and FSIZ have mean values and standard deviations (in parenthesis) of 0.46% (0.67%) and 26.40 (2.33%), respectively while ROA, ROE, and EPS have their mean and standard deviation as 2.89% (4.22%), 13.11%

(14.50%), and N1.30 (N2.44), respectively. All the variables, except FSIZE have higher standard deviations, which show higher variability in the performance the sampled firms. The results also reveal higher skewness in INTGB and EPS while all the variables showed peakness, except FSIZE. In the same vein, the probability values of the Jarque-Bera statistics reveal that none of the variables is normally distributed – which is expected, given that the data is panel.

Table 4.2: Correlation Matrix

	INTGB	FSIZE	ROA	ROE	EPS
INTGB	1.000000				
FSIZE	-0.048219	1.000000			
ROA	-0.021132	-0.208963	1.000000		
ROE	0.106557	0.268300	0.600123	1.000000	
EPS	-0.114718	0.577476	0.096580	0.368996	1.000000

Source: Author's Computation

The correlation statistics in Table 4.2 reveal that intangible assets have a negative correlation with both ROA and EPS but a positive correlation with ROE. On the other hand, INTGB correlates negatively with FSIZE. The results also show that there are no perfect correlations among the independent variables, thus suggesting absence of multi collinearity in the model estimate.

Table 4.3: Hausman Test

Test Results	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Model 1	10.359510	2	0.0056
Model 2	9.073738	2	0.0107
Model 3	15.815334	2	0.0004

Source: Authors' Computation

The results of the Hausman tests indicate chi-square statistics and probabilities (in parenthesis) of 10.36 (0.0056), 9.07 (0.0107), and 15.82 (0.0004), respectively. Thus, the fixed effect model is more desirable for estimating all models.

Table 4.4: Panel Regression Test

Variable	Model 1	Model 2	Model 3
INTGB	1.153663 [3.630557] ***	2.824970 [3.156357] ***	0.256041 [2.403486] **
FSIZE	0.177159 [1.192207]	5.403326 [7.545092] ***	0.570203 [3.189689] ***
C	-2.312474 [-0.585616]	-130.8064 [-6.860204] ***	-13.87044 [-2.930117] ***
R-sq.	0.722526	0.676452	0.722526
Adj. R-sq.	0.693097	0.642136	0.693097
F-stat.	24.55148	19.71261	24.55148
Prob(F-stat.)	0.000000	0.000000	0.000000
D-Watson stat.	1.786699	1.671440	1.979940

Authors' Computation

***Significant at 1%, **Significant at 5%.

From the results in Table 4.4, the explanatory variables determine 69.31%, 64.21%, and 69.31% of the variations in ROA, ROE, and EPS, respectively. More so, the t-statistics reveal that INTGB has significant positive effects on all three performance proxies, while FSIZE also has significant positive effects on both ROE and EPS but an insignificant negative effect on ROA.

Discussion of Findings

The result of the fixed/random effects panel regression reveal that intangibles estimate exert a significant positive influence on all the dependent variables: ROA, ROE and EPS, of the selected banks and insurance companies assessed in this study. The positive sign of the coefficients of intangible assets is consistent with the a priori expectation and implies that an increase in intangibles will result in an increase in the financial performance of banks and financial institutions. These results agree with Zhang (2017) whose empirical evidence showed that intangible assets have positive and significant relationship with firms' financial performance, proxied by Return on Assets (ROA), but contrasts that of Nangih et al. (2020), who found a negative effect of intangibles on financial performance.

This is hinged on the fact that intangible assets play a crucial role in the operation of banks and insurance companies. To a very large extent, the computer software, which is a crucial component of the intangible assets of banks and insurance companies determine the

competitiveness of the company in terms of technological advantage, given that all banking and insurance services are highly automated. More so, the higher the goodwill that a bank or insurance company builds, the higher the patronage and loyalty; thereby resulting in better overall financial performance.

On the other hand, firm size was found to have a significant negative effect on ROA but a significant positive effect on both ROE and EPS. The negative effect of FSIZE on ROA is inconsistent with the a priori expectation and implies scale diseconomies whereas the positive effect of FSIZE is consistent with the a priori expectation and implies that the firms assessed enjoy economies of scale. Similar studies by Junaidu and Saidu (2018), Gatsi, et al. (2013) also established that size has a significant positive effect on firm financial performance. Thus, financial firms can leverage on size advantage to enhance their performance due to its probable cost-efficiency.

5. CONCLUSION AND RECOMMENDATIONS

This study was undertaken to assess the extent of the effect of intangible assets estimations on the financial performance of banks and insurance companies in Nigeria. The assessment was based on a panel of 20 firms – 10 banks and 10 insurance companies. The results show that intangible assets estimations exert significant positive effects on both the ROA, ROE, and the EPS of the selected firms. Consequently, there is a direct link between intangibles assets and the financial performance of banks and insurance companies. To this end, banks or insurance companies with higher intangible assets valuations are likely to show superior financial performance. The study therefore recommends that:

- i. Management of banks and insurance companies should ensure that efforts are geared towards maintaining and improving on their intangible assets. This can be done by improving on customer relations as well as the acquisition of computer software. This will go a long way in enhancing competitiveness, which will lead to superior performance.
- ii. Banks and insurance companies should also ensure cost efficiency in their operations in order to ensure better financial performance.
- iii. The management of banks and insurance companies should target on expanding the scale of their operations in order to reap scale economies.

Competing Interest: The authors declare that there is no competing or conflicting interest in this manuscript.

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