



POLAC ECONOMIC REVIEW (PER)
DEPARTMENT OF ECONOMICS AND MANAGEMENT SCIENCE
NIGERIA POLICE ACADEMY, WUDIL-KANO

EFFECT OF INTANGIBLE ASSETS AND VALUE RELEVANCE OF ACCOUNTING INFORMATION OF LISTED NON FINANCIAL FIRMS IN NIGERIA

Bukar Amos (PhD)

Department of Accounting, Ahmadu Bello University, Business School, Zaria Kaduna State, Nigeria

Mohammed Aliyu

Department of Accounting, Nuhu Bamali Polytechnic, School of Management, Zaria Kaduna State, Nigeria

Babangida Amnu Abdullahi

Department of Accounting, Nuhu Bamali Polytechnic, School of Management, Zaria Kaduna State,

Munkaila Musa Baba

Department of Business Administration, Nuhu Bamali Polytechnic, School of Management, Zaria Kaduna State, Nigeria

Abstract

As a result of the nature of the economy gap may exist between book value per share and earnings per share when there is a decrease in market value of the companies. This paper examines the effect of intangible assets and value relevance of accounting information of the listed non-financial companies in Nigeria. This study used correlational and Ex-post facto research design where Olhson (1995) model was adopted. The data was source secondarily on Earnings per share (EPS), Book value per share (BVPS), intangible assets per share (INPS) and price per Share (PPS). The population of the study is 76 manufacturing firms that were listed on the Nigeria Stock Exchange over the period (2012 to 2019). The General least square (GLS) regression model documented that Earnings per share (EPS), Book value per share (BVPS), and intangible assets per share (INPS) and price per Share (PPS) are value relevance. The study therefore, recommends that regulatory authority and standard setter such as The FRCN, SEC and NSE should enforce adherence to specific period of time that the annual audited financial reports of all listed firms should be submitted so that investor can determine the performance of the companies through BVPS and EPS. Also, managers are expected to have positive disposition with regard to their disclosure so that the firms' financial statement reveals the real value of intangible assets in the companies.

Keywords: Book value per share, earnings per share, intangible assets and price per share.

Introduction

Accounting is considered as one of the vital means used by corporate firms in communicating to the users the financial position of a firm. Users of accounting information analyze assets, liabilities and equity of the firms in order to make accurate economic decisions. This analysis of assets,

liabilities and equity for taking any economic decision has been expressed and considered in literature as value relevance (Benjamin, 2017). This means the concept of value relevance is used to reflect the main function of accounting numbers such as book value per share, earnings per share that enable all users of accounting information in

the valuation of securities to make rational decisions (BankoleK & Ukolobi, 2020).

In manufacturing companies, there are reasons why it become necessary to carry out studies on value relevance and intangible asset, one of the reason is the information content it possess for the investors about the current share price and performance of the companies. This indicates that once the accounting information are prepared in a prudent manner, it high quality would aids investors in making optimal economic investment decision (Alade,2018). Also, the standard setters and regulatory authority like FRCN, NSE, SEC may use the accounting numbers in order to get information with regard to firms financial performance and position.

Furthermore, in recent time, business activities have been moving towards knowledge-based where investment in intangible assets has remained relevant not only for the production of goods, but for the value creation and manipulation that increase the market value per share of the firms. Therefore, because of this, the significance of intangible assets shows that there is a need for firms to invest and reflect the intangibles assets in their financial position Nik and Norhayati (2019). Thus, gap may exist between book value per share and earnings per share when there is a decrease in market value of the companies since all economic activities undertaken within the reported period may show the state of financial performance and position of the companies. This shows that, the subjective nature of intangible assets makes the valuation process more difficulty. Therefore, this requires investigation about their effect on the current financial statements and position of the listed manufacturing firms in Nigeria.

Research Questions

To achieve the research goal of study, there is a need to ask questions that provide structure to the research process and serve as guide for the attainment of research objectives. In line with this, the following research questions are raised:

- i. To what extent do intangible assets affect value relevance of accounting information in the Nigeria manufacturing sector?

- ii. What is the effect of book value per on value relevance of accounting information in the manufacturing sector in Nigeria?
- iii. To what extent do earnings per share affect value relevance of accounting information in the Nigeria manufacturing sector?

Objectives of the Study

The main objective of the study is to evaluate the value relevance of intangible assets of listed manufacturing firms in Nigeria. The specific objectives are to:

- i. Examine the effect of intangible assets on value relevance of accounting information in the Nigeria manufacturing sector?
- ii. Assess the effect of book value per share on value relevance of accounting information in the Nigeria manufacturing sector?
- iii. Examine the effect of earnings per share on value relevance of accounting information in the Nigeria manufacturing sector?

Hypotheses of the Study

In line with the problem and objectives of this study, the following hypotheses are formulated in null form:

H₀₁ Intangible assets have no significant effect on value relevance of accounting information in the Nigeria manufacturing sector.

H₀₂ book value per share has no significant effect on value relevance of accounting information in the Nigeria manufacturing sector.

H₀₃ earnings per share has no significant effect on value relevance of accounting information in the Nigeria manufacturing sector.

Concepts of Book Value Per Share

Nik and Norhayat (2019) defined book value as the ability of accounting numbers to show the incremental effect of market value of security, in the security market. Ali, Maher and Abdelfettah (2018) affirm that it encompasses the changes in book value per share in relation to share price. Olubukola, Uwalomwa, Jimoh, Ebeguki and, Olufemi (2016) assert that value relevance is an idea and pillars that are related to relevance and reliability. In this content, it means the difference among book value per share, earnings per share and share price. Sami (2016),

defines value relevance as the accounting information that summarized information concerning accounting numbers and underlying share prices. Olugbenga and Atanda (2014) opine that book value per share is defined as the measures of the strength of relationship between market value, book value and earnings per share of the firm. The basic feature in this definition is the concepts of accounting number that is related to security market value per share.

Concepts of Earning Per Share

Ali, Maher and Abdelfettah (2018) opined that earning per share is closely related to accounting numbers. In their view earnings per share centers on the accounting information that is important in determining stock price or stock return. BankoleK and Ukolobi (2020) stated that in accounting, earnings per share can be referring to as after-tax net income divided by number of share issued. To the investors it is the main determinant of its share price; this is because earnings per share will indicate to the users of information how profitable and successful the business is performing in the long run. That means earnings per share ratio for evaluating the prices of the shares. Habeeb and Athambawa (2015) view the concepts of earnings per share in relation to accounting information and as a determinant of stock price and return. That means listed companies needs to improve on the quality of earnings reported, since it has a stronger ability to explaining share prices of firm.

Concepts of Intangible Assets

There is no consensus on the definition of intangible assets in accounting literature, but in most cases a wide range of expressions are used to describe the same phenomenon and its different aspects. Haji and Ghazali, (2018) define intangible asset as non-physical assets of the organization that cannot be touched or physically handle. In the words of Robert (2014), intangible assets are non-physical asset of the companies that cannot be seen or touched. Nik and Norhayati (2019) view intangible assets as those non-monetary assets of a company which are not seen, touched and at the sometime physically measured. However, International Accounting Standard (IAS 38) explains the way intangible assets should be valued using its feature such as intangibility, controllability and flow of economic benefits.

Value Relevance of Intangible Assets

Several empirical studies have been carried out on the value relevance and intangible assets of listed companies in different parts of the globe. For instance Yulia (2021) examine the effects of intangibles on market value of 340 Russian listed manufacturing companies over the period 2009–2018. The study used operating revenue as the independent variable, while fixed assets, other assets; intangible assets were used as proxies for independent variables. The result of the study indicates a significant market value of the firms. Saheed, Norfadzilah, Johnson and Abdullahi (2021) evaluate the effect of value relevance and timely loss recognition and IFRS adoption. The study used 63 non-financial companies' annual reports listed on the Nigerian Stock Exchange (NSE) over the period 2008 to 2018. The study used 5years pre-adoption and 5years post adoption. Multiple linear regressions were used in analyzing the collected data via STATA software. The result shows a significant increase in the value relevance of financial reports after IFRS adoption. Mohaimen (2021) investigate the value relevance of accounting information under integrated reporting (IR) in a comparative mandatory and voluntary setting. The study used listed farms in Europe listed manufacturing companies over the period 2011 to 2019. The study made used of multiplicative log-linear model in the measurement which is a novel technique that mitigates the shortcomings of traditional value relevance models. The result of the study show that value relevance of accounting information increases after the implementation of IR in the mandatory setting.

Book value per share

Ogbodo, Osisioma and Benjamin (2020) investigate the relationship between value relevance of accounting information and share price of 60 listed manufacturing companies on the Nigerian Stock Exchange (NSE) spanning the period 2010-2019. Ordinary Least Square (OLS) regression analysis and Granger Causality test was used with the aid of E-View 9.0 in analyzing the data. The results of the study revealed that there is a significant positive relationship between book value per share, earnings per share and the Share Price. Abdalrahman

(2019) examine the relationship between book value, earnings per share, dividend per share, leverage ratio and share price using the non-financial firms of Turkey that were listed on the Borsa Istanbul over the period (2008-2017). The study employed the uses of Olhson (1995) model in analyzing the panel data. The result of the study indicates a significant positive relationship between book value per share, earnings per share, dividend per share and share price. However, leverage ratio leverage ratio show insignificant and negative relationship with stock prices. Akadakpo and Mgbame (2018) examine the relationship between book value per share, earnings per share of accounting information and price per share using the moderating effect of timeliness over the period of 2011 – 2014). The data were analyzed using multiple panel approach. The results of the study indicate an insignificant relationship between earnings per share and price per share. While, dividend and cash flow have a negative and insignificant effect on price per share, but book value per share

Earnings per share

Bankole and Ukolobi (2020) investigate the value relevance of accounting information using 52 financial service companies listed in the Nigerian Stock exchange over the period 2012-2018. The study used Eviews 10 as a tool of analyzing the data. The result of the study shows negative and insignificant relationship between book value per share, dividend per share, earnings per share, return on equity, leverage and cash flow and share price. Yeboah (2020) investigate the impact of accounting information environment and the IFRS adoption effect on capital

structure, corporate firm and macroeconomic performances of 49 listed agricultural, construction, manufacturing and mining firms in the Republic of South Africa over the period 2001 to 2014. The results of the study indicate that IFRS adoption significantly increases the return on investment capital, earnings per share and operations margins. Lyndon and Ebipudo (2019) investigate the value relevance of accounting information using Unilever Nigeria PLC and a multinational company listed on the Nigerian Stock Exchange under the consumer goods sector over the period 2009 to 2018. The study employed the uses of influential statistics and linear regression analysis which is based on the ordinary least squares method as techniques for data analysis. The findings of the study indicate that earnings per share and dividend per share have insignificantly relationship with price per share.

Theoretical Framework

Spence (1973) and Morris (1987) said signaling theory emerged in order to address the problem of information asymmetries between the preparers of financial reports and users in the capital markets. These information asymmetries can be reduced once if more signaling information would be sent to others (Morris, 1987). This applies to value relevance and intangible asset where Holthausen and Watts (2001) opines that without theories to interpret empirical association of value relevance of intangible asset, there would be limited implications or inferences for standard setting. Therefore, this theory was selected to underpin the value relevance of intangible asset using listed manufacturing in Nigerian.

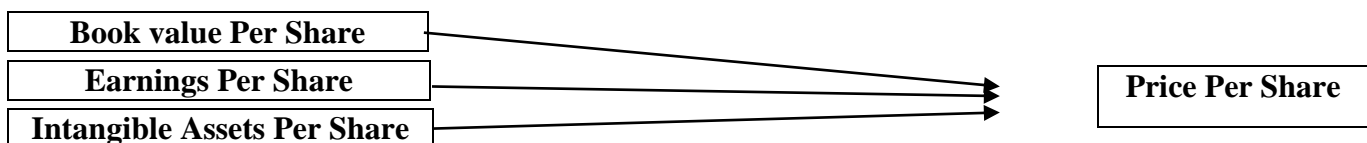


Fig. 1 Conceptual Model

Source: Designed by the Author, 2019

Methodology

This paper adopts correlational research design and the population of the study comprised of seventy six (76) manufacturing firms with sample is 45 companies listed on

the Nigerian Stock Exchange firm January 2012 to 31st December 2019. Inferential statistics were performed which employed the balance panel least square regression

model. The study used invariant Ohlson's (1995) price valuation model.

Model Specification

$$PPS_{it} = \beta_0 + \beta_1 BVPS_{it} + \beta_2 EPS_{it} + \beta_4 INPS_{it} + \varepsilon_{it} \quad (1)$$

Where:

β_0 = Constant or intercept

PPS_{it} – Stock price 3 months after the end of fiscal year.

Where:

PPS_{it} = Share price

EPS_{it} = Earnings per share of firm i at time t .

$BVPS_{it}$ = Book value per share of firm i at time t .

$INPS_{it}$ = Intangible Assets Per Share of firm i at time t .

B_{1-3} = Coefficient of explanatory variables

ε_{it} = Error terms

Table 1: Variables of the Study and their Measurement

Variable Acronym	Variable Name	Type	Variable Measurement	Sources
PPS_{it}	Price Per Share	Dependent	The price of shares of listed Manufacturing firms three months after the fiscal year	Eko,2004, Akpaka <i>et al</i> (2014)
$BVPS_{it}$	Book value per share	Independent	The Book value per share (BVPS) is defined as total asset less total liabilities divided by the number of outstanding share.	Eko,2004, Ohlson (1995),
EPS_{it}	Earnings per share	Independent	Earnings per Share (EPS) profit after tax divided by the number of outstanding share Issued.	Eko,2004, Ohlson (1995),
$INPS_{it}$	Intangible Asset per share	Independent	Net amount of intangible assets at year-end in the financial statement divided by number of outstanding share issued.	Kimouche and Rouabhi(2016);

Sources compiled by the author, (2019)

Table 1 reports the summary of intangible assets accounting information variable and price per share of

listed manufacturing firms in Nigeria over the period (2012-2019).

Table 2: Descriptive Statistics

Variable	Obs	Mean	Std.dev.	Min	Max	Skewness	Kurtosis
PPS	358	2.254	1.606	0.010	6.957	0.000	0.003
BVPS	358	2.661	0.252	1.614	3.636	0.035	0.004
EPS	358	1.361	1.372	0.060	9.700	0.000	0.000
INPS	358	2.778	.260	0.000	0.316	0.000	0.000

Source: Computed and Compiled by Author, 2019

The average price per share recorded as presented in the distribution for PPS, BVPS, EPS and INPS is (N2.254,2.661,1.361 and 2.778) with the standard deviation of (N1.606, .252, 1.372 and 260). This indicates that the data is spread across the mean of PPS, BVPS, EPS and INPS as it influence the PPS of listed manufacturing firms in Nigeria which differs from one company to the other respectively. The highest price per share recorded is

N9.70K, while the minimum is N0.010K. This support the finding of Saheed et al. (2021) and Yalia(2020) who carried out the study in Nigeria. The implication is that generally, the Nigerian listed firms with regard to their market values per share are not concentrated around same value, suggesting how widely different the firms are valued by the market participants at the stock market.

Table 3: Correlation Matrices of Variables of the Study

Variables	PPS	BVPS	EPS	GWPS
PPS	1.000			
BVPS	-0.548*	1.000		

EPS	0.144*	-0.023	1.000	
INPS	-0.019	0.471*	0.079	1.000

Source: Computed and Compiled by Author, 2019

Table 3 shows the relationship between the variables used for analysis. On the contrary, PPS has a negative correlation with BVPS and INPS which has a coefficient of (-0.548* and -0.019) respectively. This shows that despite an increase in PPS results there is a decrease in book value per share and intangible assets per share of listed manufacturing firms in Nigeria because some companies made losses. The relationship between PPS and

EPS is positive and strong with a coefficient of 0.144*, this demonstrates that PPS has increases as EPS increase. This is actually expected as a firm with high earnings is supposed to have a high price for its shares. EPS has a negative relationship with BVPS and coefficient of -0.023. However its relationship with intangible assets per share is positive.

Table 4: Summary of the Panel Corrected Standard Errors Model one

Variable	Beta Coeff	T-value	Prob	VIF	1/VIF
Constant	7.112	9.09	0.000		
BVPS	-3.873	-8.66	0.000	1.18	0.847
EPS	0.103	2.97	0.003	1.18	0.848
INPS	1.166	3.60	0.000	1.00	0.999
R ²	0.34				
Prob.	0.000				

Source: Computed and Compiled by Author, 2019

The results in table 4 show that the beta coefficient for PPS, BVPS, is (7.112,-3.873,) and its t-value is (9.09, -8.66,) with a significant value of (0.000)1%. This signifies that despite the fact that BVPS show a negative coefficient it is still considered as normal as information behavioral theory play a great role in interpreting the book value per share when is reported as negative this can simply be attributed to economic crisis experience during the period of the study (Akerlof, 1970; Hail, 2013 and Lam et al., 2013). The findings are in line with the work of (Abdalrahman, 2019, Akadakpo and Mgbame, 2018 and ogbodo, Osisoma & Benjamin, 2020).

The EPS in table 4 show that the beta coefficient for EPS is (0.103) and its t-value is (2.97) with a significant value of (0.003)1%. The positive coefficient indicates that there is an increase in share price which attracted the investors of listed manufacturing firms in Nigeria. Therefore, the significant level of one percent provide us with strong evidence of the rejecting the hypotheses two of the study. The finding is in line with the studies of (Bankole &

Ukolobi, 2020, Yeboah, 2020 and Lyndon & Ebipuado, 2019).

The EPS in table 4 show that the beta coefficient for INPS is (1.166) and its t-value is (3.60) with a significant value of (0.000)1%. Also, the positive coefficient indicates that there is positive deposition of intangible assets in indicating to the investors the direction of the performance of the companies despite recession and economic crisis experience. Therefore, the significant level of one percent provide us with strong evidence of the rejecting the hypotheses three of the study. The finding is in line with the studies of (Yulia, 2021, Saheed et al. 2021 & Mohaimen, 2021).

The VIFs and 1/VIF are used to check for the multicollinearity. The VIFs indicate that the explain variable has a strong linear relationship with the explanatory variables and the 1/VIF is the reciprocal, (Field, 2005). Thus, the rule of thumb generally indicates that VIF greater than 10 and a tolerance value less than 0.1

or 0.2 would show that multicollinearity is a concern in the case of multiple regression models because it decreases the reliability of the empirical result (Field, 2005). From the result of the analysis, it can be deduced that, there is no evidence of severe multicollinearity for the variables BVPS, EPS and INPS as there is no VIFs exceeding 10 and tolerance statistics below 0.1.

The cumulative results above put together show that the degree of association of the coefficient of variation/determination (R^2) value of 0.34 shows that the cumulative influence of regressors are able to provide explanation for the variation in the regressand up to about 30% as indicated by the value of the R^2 and remaining 66% is controlled by other factors. However, the above result clearly reveals that 34 per cent of variations in price per share is dependent on intangible asset per share other variables constant. This implies that intangible asset per share is value relevant.

Conclusions and Recommendations

The study indicates that BVPS has negative relationship with PPS, but EPS and INPS shows that they are positive

that implies that they are more value relevant and serves as positive predictor of share price on the floor of the Nigerian stock market. Therefore, the findings provided us with strong basis for conclusion that, EPS and INPS of Nigerian listed firms is significant and more value relevant in manufacturing companies this have made accounting information prepared and standard setter more informative and of higher quality to NSE participants. On the bases of that the study recommend that the companies should submit their annual report and make announcement of share price on timely basis because this influences value relevance. The FRCN, SEC and NSE should enforce adherence to specific period of time that the annual audited financial reports of all listed firms should be submitted so that investor can determine the performance of the companies through BVPS and EPS. The significant level of intangible assets suggested that intangible assets have significant effect on share price of quoted manufacturing companies in Nigeria. Therefore, managers are expected to have positive disposition with regard to their disclosure so that the firms' financial statement reveals the real value of intangible assets in the companies.

Reference

- Abdalrahman K. (2019) The value relevance of accounting information within turkey: evidence from non-financial firms. Near east university graduate school of social sciences department of banking and finance banking and accounting program. Master's Thesis , 2019.
- Akadakpo, B. A. & Mgbame, M. C. (2018) Value Relevance of Accounting Information: The Moderating Effect of Timeliness, *International Accounting and Taxation Research Group*, Faculty of Management of Science, University of Benin, Benin City Nigeria.
- Akerlof, G. A. (1970) The market for "lemons": Qualitative uncertainty and the market mechanism. *Quarterly Journal of Economics* 84(8):488-500.
- Alade M. E., Olweny T. & Oluoch O. (2018) Impact of IFRS Adoption on Value Relevance of Earnings and Book value per share of Nigerian Listed Non-Financial Firms. *European Journal of Business*, 5(4) 2017- 2056.
- Bankole K.O. and Ukolobi I.O. (2020) Value Relevance of Accounting Information and Share Price in Financial Service Industry. *Journal of Economics* 1, (2), 79-98
- Benjamin T. A. (2017) IFRS Goodwill Impairment Test Audit Approach, Earnings Management, and Capital Market Perception Dissertation approved in fulfillment of the requirements for the degree Doctor of Economics and Social Sciences (Dr. rer. pol.) submitted by Dipl.-Wirtsch.-Ing. Lbersmann. Darmstadt 2017 D17 Published online at TUpriints and the Deutsche Nationalbibliothek (Open Access).
- Fields T. (2005). Empirical research on accounting choice. *Journal of Accounting and Economics* 31, 255–307.
- Haji, A. A., & Ghazali, N. A. M. (2018). The role of intangible assets and liabilities in firm

performance: Empirical evidence. *Journal of Applied Accounting Research*, 19(1), 42–

Holthausen, R. W., & Watts, R. L. (2001). The relevance of the value-relevance literature for financial accounting standard setting. *Journal of Accounting and Economics*, 31, 3-71.

IAS (38) an outlines of the accounting requirements for intangible assets, Research and Development Costs issued,

<https://www.iasplus.com/en/standards/ias/ias38>.

Kimouche B. and Rouabhi A. (2016) Intangibles and Value Relevance of Accounting Information: Evidence from UK Companies. *Jordan Journal of Business Administration*, 12, 2, 2016.506-529.

Mohaien D. (2021) Value Relevance of Integrated Reporting using a Novel Approach: Comparative Cross Country Evidence of Mandatory and Voluntary Implementers. A thesis submitted in fulfillment of the requirements for the degree of Doctor of Philosophy in Accounting at the School of Accounting and Commercial Law of Victoria University of Wellington.

Morris, R. D. (1987). Signalling, agency theory and accounting policy choice. *Accounting and Business Research*, 18(69), 47-56.

Nik A. B. N. A. & Norhayati bt A. (2019) Value Relevance of Intangible Assets Before and After IFRS 138 Adoptions: Evidence From Malaysia. *International Journal of Financial Research* 10, (3) 12-27, Special Issue; 2019. URL: <https://doi.org/10.5430/ijfr.v10n3p267>

Ogbodo, O. C and Osioma, Benjamin C. (2020) Value Relevance of Accounting Information and share price: An empirical study on manufacturing firms in Nigeria. *International Journal of Advanced Academic Research* 6(12)65-82.

Robert P.M. (2014). Intellectual Property right, input market and the value of intangible assets. Boalt Hall School of law. 59. <http://doi.org/10.1108/JAAR-12-2015-0108>.

Saheed A. L., Norfadzilah R., Johnson K. O. and Abdullahi B. A. (2021) An Empirical Evidence of the Value Relevance and Timeliness of Financial Reports in the Post Adoption of IFRS in Nigeria <https://doi.org/10.11118/actaun202068020373> Received: 31. 12. 2020, Accepted: 6. 3. 2021/

Spence, A. M. (1973). Job market signaling. *Quarterly Journal of Economics*, 87(3), 355-374.

Yeboah M. (2020) Assessing the impacts of IFRS Adoption on Capital Structure, Corporate and Macroeconomic Performances in the Republic of South Africa Supervisor: Submitted according to the requirements for the degree of Doctor of Philosophy of University of Pecs, 2020

Yulia T. (2021) Intangible Assets and the Efficiency of Manufacturing Firms in the Age of Digitalisation: the Russian case. *International Journal of Engineering Management in Production and Services* 13(1)7-26.