Human and Intellectual Capitals Effect on Manufacturing Companies Performance in Nigeria

Etim Osim Etim* and Idorenyin Henry Effiong

Department of Accounting, Faculty of Business Administration, University of Uyo, Nigeria
E-mail: osimacc@gmail.com
Corresponding Author

A B S T R A C T

Reporting human and intellectual capital and its effects on corporate profitability has become a global issue following the introduction of the Global Reporting Initiative (GRI) framework. This study was conducted to examine the effect of human and intellectual capital reporting on the profitability of listed manufacturing companies in Nigeria. The ex-post facto research design was adopted involving the application of content analysis to extract required data from published financial reports of 23 sampled industrial and natural resources manufacturing companies selected purposively from 2009 to 2018. The Returns on Assets (ROA) was the proxy for profitability while the computed index values for human and intellectual capital reporting were the independent variables. The data obtained were analyzed using descriptive and inferential statistics from the multiple regression analysis models. Results showed that human and intellectual capital reporting has a significant positive effect on ROA with an R^2 value of 13.8%, F-cal 9.735, â-value HCR 0.187 and ICR 0.323; t-cal value HCR 2.518, ICR 5.009 and P-value < 0.05. It was concluded that despite the fact listed manufacturing companies are yet to fully embrace human and intellectual capitals reporting, these categories of capitals have a significant positive effect on the profitability of manufacturing firms in Nigeria within the study period and companies should invest more in acquisition and enhancement of operational capability of these assets particularly in the phase of digital and knowledge economy that has pervaded the business landscape.

INTRODUCTION

The bedrock of financial accounting and reporting over the past decades have been the disclosure of economic transactions with financial implications with no regard to factor inputs without tangible values attached to them. This reporting system is seen as narrow and lopsided

corporate information disclosures hence cannot guarantee corporate sustainability nor reflect true financial position and performance. The lopsided reporting might lead to the firms' incapability to balance the corporate actions and activities with performance and sustainable standpoint, especially with the recent paradigm in reporting focus from stakeholder returns or the traditional (financial) accounting to sustainability reporting; a reporting framework that encompasses all-inclusive reports.

Elkington (1997) opined that business should at all times produce all-inclusive reports, that is, information which covers all classes of assets, economic, social and corporate governance and that it is only when companies begin to adopt this new reporting framework that the needs of all stakeholders will be met. It thus behooves companies to report both qualitative and quantitative economic performance to its interested parties. Turker and Sayer (2014) stressed that financial reporting focuses on a portion of the company's position and is unable to disclose the effects of environmental factors, social factors, and other sustainable issues. Also, it is unable to show quantitative information concerning the risks and opportunities within the environment, or improve entity image and appraise the performance of the company in line with the regulations and customs of the society.

In a bid to proffer a lasting solution to company disclosure drawbacks, the International Integrated Reporting Council (IIRC) in 2010 launched a new reporting approach called Integrated Reporting (IR), to solve the problem of one-sided corporate reporting. This framework is meant to ensure corporate institutions report all the capitals that they use to create or decrease value over time, for disclosing various sustainable capitals-environmental, social and relational, human and intellectual. Morros (2016) stressed that organizations disclose to diverse interest groups who might not only be interested in financial information but would be more interested in where, why, and how corporate entities create value.

Today, many countries are mandatorily practicing Integrated Reporting (IR). Although Nigeria is yet to make IR, a mandatory practice, there is a need for companies to incorporate the Global Reporting Initiative (GRI) framework in their annual corporate reports and accounts especially when evaluated from a cross-border listing view-point. Also, many studies have been conducted in Nigeria in the areas of environmental costs and disclosures, and performance of various companies in Nigeria particularly oil and gas, pharmaceutical and cement firms as well as relational and social capitals studied mostly under Corporate Social Responsibility (CSR) and profitability of firms. The human and intellectual capital components

of sustainable capital reporting and performances of manufacturing companies have not received much research attention.

1.1. Statement of the Problem

The exclusion of non-financial information in the annual reports of corporate entities has made the reporting of business financial position and performance obscure vital information which would have made performance evaluation easy and clear. This is because all the capital employed by the firms in the creation of values is not linked with how the capital influences firms' performance. It has been observed that financial capital and manufactured capital (financial information) have traditionally dominated economic models and business thinking. One may wonder whether these two capitals are the only corporate capital deployed in value creation by firms over time. But the fact is that this is done at the expense of sustainable capital, namely environmental capital, social and relational capital, human and intellectual capital. Why the disclosure of these diverse capitals in annual reports is one thing, evaluating the impact on performance is another. Also, most empirical studies have focused on environmental capital in the form of costs and disclosures as well as social and relationship capital in the form of corporate social responsibilities and how they affect corporate profitability. Studies on human and intellectual capital's effect on corporate performance are scanty to the best knowledge of the researchers for Nigerian manufacturing firms. This study is in furtherance of providing empirical evidence on the effects of human and intellectual capital on the performance of manufacturing companies in Nigeria.

1.2. Objectives of the Study

The specific objectives set to be achieved in this study are:

(i) To determine how human capital reporting influences profitability measured in terms of the Returns on Assets (ROA) of listed manufacturing firms in Nigeria.

(ii) To evaluate how intellectual capital reporting affects profitability (ROA) of the listed manufacturing firms in Nigeria.

1.3. Hypotheses of the Study

The hypotheses for the study are stated in null form as follows in line with the objectives:

Ho_1: There is no significant influence on human capital reporting on profitability (ROA) of the listed manufacturing firms in Nigeria.

Ho$_2$: There is no significant effect of intellectual capital reporting on profitability (ROA) of the listed manufacturing firms in Nigeria.

1.4. Significance of the Study

It is expected that the outcome of the findings is of benefit to operators of manufacturing companies in Nigeria, and other stakeholders in the Sector. Management consultants, financial analysts, and policymakers in the capacity of regulatory and statutory agencies also benefit from the findings in the course of discharging their responsibilities of enhancing a vibrant stock exchange. Those in academia find the study as relevant reference material for future studies as well as teaching resource material in the fields of accounting, finance, economics, and management disciplines.

The rest of the paper is structured under a review of related literature, the methodology of the study, findings and discussions, conclusion, and recommendations.

2. REVIEW OF RELATED LITERATURE

The literature is reviewed under three sub-sections, conceptual review, the theoretical review, and review of empirical studies.

2.1. Conceptual Review

The key concepts of the study are briefly reviewed under the section

2.1.1. Concept of Human Capital Reporting

Human Capital Reporting involves the disclosures of all workers or employees and management efforts to the firm and the value created or decreased over time to all interested users. Human capital includes the knowledge, efforts, capacities, skills, competencies, and attributes embodied in individuals which facilitate the creation of personal, social, and economic wellbeing (OECD, 2004). Human health is a key component, as it enables an individual to remain competent in applying their knowledge and skills optimally or generating economic value for themselves, for the firm, for society, and the nation.

Human capital is mostly agreed to comprise the entity's competencies, the knowledge, skills, and experience of the company's employees and managers, as they are relevant to the task at hand, as well as the capacity to add to this reservoir of knowledge, skills, and experience through individual learning (Dess and Picken, 2000). Human Capital entailed people's competencies, capabilities and experience, and their motivations to innovate,

including their: alignment with and support for an organization's governance framework and risk management approach, and ethical values such as recognition of human rights; ability to understand, develop and implement an organization's strategy, loyalties and motivations for improving processes, goods, and services, including their ability to lead, manage and collaborate.

According to Riahi-Belkaoui (2004), human resource accounting is the practice of recognizing as well as quantifying human assets and reporting this information to interested groups and persons. In summary, firms need to report their employment data to include, the number employed (analyzed in various ways), location of employment, the age distribution of permanent work-force hours worked during the year (analyzed), employees' costs among others. Oko (2018) stated the importance, aims, and benefits of human resource accounting and reporting to include, to provide useful information to the management, financial analysts, and employees, helps the management in the employment, locating, and utilization of human resources; helps in deciding the transfers, promotion, training, and retrenchment of human resources; provides a basis for planning of physical assets, vis-à-vis human resources; assists in evaluating the expenditure incurred for imparting further education and training in employees in terms of the benefits derived by the firm as well as provides evidence of 10% local content compliance in the case of Nigeria.

2.1.2. Concept of Intellectual Capital Reporting

Intellectual Capital concerns with intangible non-current assets. A report to the European Commission by the High-Level Expert Group on reporting intellectual capital to Augment Research, Development, and Innovation (MICARDIS) (2006) presented some comprehensive viewpoints on the notion of Intellectual Capital (IC), that it involved research and development (R & D), logical thinking created property assets created through intellects or goodwill of the firms. IC is knowledgeable capital and knowledge management has garnered interest in corporate and academic settings. Intellectual capital is a set of non-financial and non-physical resources that procures a competitive advantage for the firm. It is the economic value of the total of human structural and relational capital (Neysi, Mazrach, and Mousavi, 2012). Structural capital encompasses the hardware, software, database, systems, work processes, business models, organizational structure, patents, trademarks, trade secrets, and all other codified knowledge. Relational capital is defined as all resources linked to the external relationships of the firms, with customers, suppliers, or partners in research and development. It comprises that part of human and structural involved with the companies' relations with stakeholders (investors,

creditors, customers, suppliers, etc.) as well as the perceptions that they hold about the company.

Intellectual capital disclosure is defined by Abeysekera and Guthrie (2002) as a report intended to meet the information needs common to users who are unable to command the preparation of reports about Intellectual Capital tailored to satisfy, specifically all of their information needs. Intellectual capital disclosure represents an approach that can be used to measure intangible assets and describe the results of a company's knowledge-based activities (Ismail, 2008). The type of intellectual capital disclosure is valuable information for investors, as it can help them reduce the uncertainty of the companies' prospects and facilitate in valuing the firm. Reporting of intellectual capital will create transparency that allows the manager of the enterprise to manage its intangible resource better. By creating transparency, it helps management to allocate resources to monitor development and to create a strategy. Intellectual capital reporting will facilitate decision making for companies. Neysi, Mazraeh, and Mousavi (2012) emphasized two main reasons for intellectual capital reporting: a) reporting of intellectual provides additional information which can be used to improve the management of the company as a whole; and b) reporting of intellectual capital complements the financial statements of the company and therefore provides a broader and more truthful image of the company.

There are many reasons for companies to disclose intellectual capital information in their annual reports. These are that, it helps organizations formulate their strategies, to assess strategy executions, to assist in diversification and expansion decisions, as well as the basis for compensations, and to communicate measures to external stakeholders. Disclosure of intellectual capital will raise some benefits for the organization. Among the benefits are; it will enhance transparency in terms of more disclosure on intangible information rather than tangible information, it will help inspire a sense of faith among the workforce other major stakeholders and it will support the long-term vision of the organization. Intellectual capital disclosure also is a cost burden, such as the cost of gathering, processing, and interpreting the necessary data. Vergauwen and Vanalem (2005) identify three other opposing factors for intellectual capital disclosure, these are the transparency drawback in competitive markets, regulatory barriers, and auditor conservatism.

2.1.3. Concept of Firm Performance

The concept of firms' performance has to do with the level of success or failure of a firm. Generally, the common financial ratios used in measuring

a firm's performance are revenue growth, return on equity, and return on assets, profit margin, sales growth, capital adequacy, liquidity ratio, and stock prices. Firms' performance is mostly evaluated in terms of profitability since it measures the efficiency of the managers and the firm's return/profit for their investors. Profitability ratios or measures, therefore, provide an insight into the degree of success in achieving this primary objective (Idekulim, 2014). The most common profitability measures or ratios are Return on Capital Employed (ROCE), Gross Profit Margin (GPM), Net Profit Margin (NPM), Return on Equity (ROE), and Returns on Assets (ROA).

For this study, we adopt the Returns on Assets (ROA) as the firms' performance proxy. ROA is the extent of profit earned on every N1 or $1 invested on or utilized of total assets. ROA is sometimes called return on total assets. ROA is considered in this study because it takes into consideration total assets or all capitals in the generation of the firm's profitability or returns.

2.2. Theoretical Review

This study is anchored on the Stakeholders' Theory. The theory was developed by Freeman R. in 1984. Stakeholder theory is of opinion that, an organization would try to satisfy the concerns and aspirations of a powerful interested party, and some of the responses will be in the form of strategic reporting. The theory implies that disclosures of sustainability information by an organization are a result of pressure from interested parties. Stakeholder theory offers an in-depth understanding of the factors that encourage decision-making and performances with the social and environmental disclosure practices of business entities. Businesses are thus responsible to these stakeholders and depend upon their continued support to sustain a successful operating environment (Colman, 2004). Stakeholder theory focuses upon defining factors encouraging the continued existence of corporations. The theory would ensure that the firms consider all interest groups in their decision making when deploying sustainable capital. Stakeholder theory also helps to postulate the influence of a firm's financial characteristics on reporting of sustainable capital of the selected listed firms in the manufacturing sector in Nigeria.

2.3. Review of Empirical Studies

Some selected empirical studies relating to the study on hand are reviewed in this section of the paper.

Wild and Van-Staden (2013) employed the level and type of the integrated reporting of sustainable capital of fifty-eight firms from the data

bank of International Integrated Reporting Council and the association between firms' attributes comprising the size of the firm, type of industry, profitability, country of origin, auditor type and quality of integrated reporting of the sustainable capitals. Results revealed that most firms reported economic human, environmental and social, and relationship capital in the directors' reports of their corporate reports, while manufactured and intellectual capital was not well reported. Also, findings showed a significant association between industry type and integrated reporting of the sustainable capital, but no association between integrated reporting and the firm size, profitability, auditor type, and country of origin. Their investigation does not specifically isolate human and intellectual capitals for study but rather as a sub-component of sustainable capital, which might have obscure some pertinent features of these groups of capitals in the analyses.

Zehri, Ahdelbaki, and Bouabdellah (2012) analyzed the impact of Intellectual Capital Reporting (ICR) on the performance of Tunisian listed firms from 2009 to 2011. The samples consisted of 25 non-financial companies listed on the Stock Exchange of Tunisia. These companies operate in different sectors ranging from agricultural (2), Commercial (3), Industrial (12), health (2), real estate (2), telecommunication (1), and transport (3). The empirical analysis was based on the model Value Added Intellectual Capital (VAIC). This model presented an indirect measure of intellectual capital developed by Ante Pulic (1998, 2000, and 2004) and the Austrian Intellectual Capital Research Centre. The data were processed by the use of STATA 10. The constructs of the intellectual capital – capital employed, human capital, and structural capital were found to have a positive significant influence on financial performance. It was concluded that all the human, structural, material, and financial resources contribute to creating value-added by the companies.

Perera and Thrikawala (2012) investigated the impact of investment in human capital on the financial performances of the companies in Sri Lanka. Also, to examine the level of investment in human capital reported by the firm and the relationship with the firm's financial performance. The ex-post facto research design was adopted. The population of the study was 284 listed firms representing 20 sectors of Sri Lanka and a sample size of 40 companies was selected using Taro Yamane's formula as well as random sampling. Data were gathered from published financial reports of selected listed companies for the period 2009 and 2010. The Value Added Intellectual Coefficient (VAIC) was used as a measure of the human capital of the firms and as the dependent variable. Correlational and multiple regression analyses were used for data treatment. Findings revealed that there is a

significant relationship between investment in human capital and firm financial performance and that human capital investment impacted firm financial performances with a strong positive impact.

Izedonmie, Odeyile, and Kuegbe (2013) investigated the impact of human resource accounting on organizational performance in Nigeria. The ex-post facto research design was used. The population of the study was 164 listed firms in Nigeria and thirty (30) sample firms were used. The study made use of cross-sectional data drawn from the Nigerian Stock exchange Fact Book (2009). The number of employees and intangible assets reported was the proxy for human capital accounting –using the multiple regression analysis. Results revealed that human capital and intangible asset had a positive and insignificant impact on organizational performance.

Okpako, Atube, and Olufawoye (2014) determined the relationship between human resource accounting and firm performance. The study was a survey design research using primary data obtained from seven (7) companies quoted on the Nigerian stock exchange. 246 copies of the questionnaire were used for the study was obtained from the human resource, accounting, audit, and internal control department staff of the sampled firms. The principal component analysis was used to quantify the responses obtained to generate a series that captured the composite value of the human resource reporting and the firm's performance indicator was the return on equity for the period 2006 to 2010. The results revealed that human resource reporting impacted positively on the level of firm performance.

Sidharta and Affandi (2016) examined the effect of intellectual capital on financial performance in the banking sector in Java, Indonesia. Causal and exploratory research methods were used as the designs for the study. The population of the study and the sample size was the 205 rural banks for the years 2011-2013. Public 1998 research model was used – VAIC Multiple regression techniques were adopted in the study for data analysis. The results showed that intellectual capital significantly influences the financial performance of the banks.

Ekundayo and Odhigu (2016) investigated the determinants of human capital accounting in Nigeria. Specifically, secondary data was used for the study, and data were obtained from the annual reports of 30 companies listed on the floor of the Nigerian Stock Exchange (NSE) as of 31st December 2014. Pooled data were used and ordinary least squares regression technique to test the relationship between the variables. The result revealed that welfare and training cost has a significant impact on human capital in Nigeria. The researchers recommended that the size of employees would

impact positively on the efficiency, sustainability, and profitability of the firm, and training of staff both locally and internationally should be taken into consideration because it will help to expose them to current developments in the area of specializations.

Adebawojo (2017) examined the mediating role of human asset accounting on organizational performance and growth in the Nigerian banking industry from 2007 to 2011. Survey and ex-post facto research designs were adopted. The population consisted of the management staff of eighteen (18) quoted banks in Nigeria. Two hundred and thirty-eight (238) management staff were selected from head offices' human resources, accounts, and audit/internal control departments of the banks adopting the Convenience Sampling Method. Multiple regression analysis was employed for data analysis. The study revealed that organizational growth in human assets significantly affected the performances of the banks. The researcher recommended the adoption of the practice of human assets accounting for Nigerian banks and other business organizations.

Oladele, Aribaba, Ahmodu, and Omobola (2018) examined the impact of human resource accounting disclosure on the financial performance of selected listed firms in Nigeria. The annual financial report index of the selected firm was used to capture the dependent variable while the human resource accounting disclosure was proxies by firm profitability, firm size, financial leverage, and industry type. Secondary data were used as obtained from sampled 20 manufacturing firms out of the 188 manufacturing and non-manufacturing firms in the Nigerian Stock Exchange for the period 2011-2015. The data collected was analyzed using descriptive statistics, correlation, and regression. The result revealed that there was a positive co-efficient value between the independent and dependent variables. Based on these findings, it was recommended that the listed firms should imbibe the culture of capitalizing and disclosing all the expenditure on human resources to improve the productivity of the firms. Also, the regulatory body should set aside a minimum standard of reporting human resource cost in the financial statement of the listed firms in other to enhance stakeholders' valuation in the statement of financial position and note to the accounts.

Barkat and Beh (2018) examined the influence of intellectual capital dimensions on knowledge process capability and organizational performance in the textile sector of Pakistan. Survey research design, 525 managerial level employees, and Tare Yamane's sample size determination formula were used to determine a sample of 267 responses. Questionnaires were used as a means of collecting data. The Structural Equation Modelling (SEM) was applied to run the multiple regression analysis and the analysis

performed with Warp Partial Least Square (WarpPLS) software. Results showed that all dimensions of Intellectual Capitals have significant positive effects on organizational performance, except structural capital. The study presents implications for human resource managers and policymakers by examining the various dimensions of intellectual capital on organizational performance in the context of a developing country.

Oko (2018) investigated the influence of human asset inclusion in the financial reports of firms in Nigeria. The specific objectives of the study were to examine the nature and characteristics of human resource investment/expenditure in quoted Nigerian Companies, to determine the relevance of the human asset accounting model concerning the quality of financial reporting of quoted companies in Nigeria. He adopted the survey research design using a questionnaire to obtain data which were analyzed using a simple regression model. The result of the analyses confirmed that there is a significant relationship between human asset accounting and corporate profitability. It concluded that capitalizing human assets would positively impact on performance and financial position of organizations and recommended its disclosure as an intangible asset in the statement of financial position.

Ewereoke (2018) evaluated the influence of intellectual capital reporting on profitability ratios of companies quoted on the Nigerian capital market. A sample of forty (40) companies was selected through a multi-stage sampling technique from 213 companies listed on the Nigerian Stock Exchange. Ex-post facto research design involving secondary data obtained from annual reports and accounts of sampled firms as well as Nigeria Stock Exchange Fact Book. Pulic 1998 Value Added Intellectual Capital Co-efficient (VAIC) model constituted the components of intellectual capital – Human Capital Efficiency (HCE), Structural Capital Efficiency (SCE), and Capital Employed Efficiency (CEE). Ordinary least square approach and multiple regression models were performed to test the hypotheses at a 5% level of significance. The result showed that intellectual capital reporting significantly influence company process measured by profits and market to book value ratio of the companies listed on the Nigeria Stock Exchange.

2.4. Gap in the Literature

From the empirical studies reviewed, it is clear that there is no study to the knowledge of the researchers that segregate the components of human capital and intellectual capital and how each separately impacts organizational performance in general and the manufacturing companies in particular. Also, previous researchers have found mixed results of the

effects of human and intellectual capitals on the performance of reporting entities. Hence, this study is sought to examine these contending issues in the case of listed manufacturing firms in Nigeria.

3. METHODOLOGY AND DESIGN OF THE STUDY

The methodology and analytical tools employed in the study are discussed in this section.

3.1. Research Design

An ex-post facto research design is adopted for the study. This is because the data required for the study already exists and cannot be manipulated. The data were extracted from published annual reports and accounts of twenty-three (23) sampled companies listed on the Nigerian capital market for the period 2009 to 2018 involving the application of the content analysis technique. Thus, secondary data is used for analysis in the study. The purposive sampling technique was used to select companies with all the relevant information required for the analysis.

3.2. Theoretical Specific of Model

The theoretical specification of the model is developed based on the selected variables of the study. The variables are performance measured by the profitability of the companies and proxy by the Return on Assets (ROA) as dependent and Human Capital Reporting (HCR) and Intellectual Capital Reporting (ICR) indexes as independent variables. The *apriori* expectations and the measurement bases of the variables are presented in Table 1.

Table 1
Theoretical framework of Human and Intellectual Capitals Reporting and Performing

Variables	Type	Measurement and Definition	Apriori sign	Source
Performance (profitability)	Dependent	Profit before interest and tax (PBIT) Total Assets (TA)		Annual Report
Human Capital Reporting (HCR)	Independent	Σ_{it} (Scores of HCR perform for the year) $\Sigma_i \Sigma_t$ (Scores of all possible cases of all the Firm's HCR for the year)	+	Annual Report
Intellectual Capital Reporting (ICR)	Independent	Σ_{it} (Scores of ICR per firm for the year) $\Sigma_i \Sigma_t$ (Scores of all possible cases of all the Firm's ICR for the year)	+	Annual Report

Source: Compiled by Researchers (2020).

3.3.3. Empirical Specification of Model

A multiple linear regression model was fitted to determine how the dependent variable, performance (perf.) is explained by the independent variables – human capital reporting, and intellectual capital reporting. The empirical model is stated as :

ROAit $= \alpha_a + a_1 HCRit + a_2 ICRit + \mu$ ……. Model 3.1

Where:

ROA $=$ Performance proxy by Returns on Assets (ROA)

HCR $=$ Human Capital Reporting (X1)

ICR $=$ Intellectual Capital Reporting (X2)

a_o $=$ constant term

$a_1 - a_2$ $=$ estimated coefficients of the independent variables

μ $=$ error term

i, t $=$ company i in year t.

3.4. Method of Data Analysis

Descriptive and inferential statistics are used for the analysis of the data and hypothesis tested at a 5% level of significance to reach valid conclusions for the study.

4. RESULTS AND DISCUSSION OF THE FINDINGS

The results of the data analysis and discussion of the findings are carried out in this section of the paper.

4.1. Statistical Analysis of Results

The statistical analysis of results is presented in this section.

The level of human and intellectual capital reporting was determined using a checklist of 14 items (See Appendix) in line with IIRC (2013) framework. Each firm was scored "I" for full disclosure, "$^1/_2$" for partial disclosure, and "O" for non-disclosure under the content analysis of accounts in annual reports.

The qualitative index score for each firm was computed by using the probability index-based method as given thus:

HCR/ICR Value =

Σit (dit disclosed of each capital's issues per firm for the year)

ΣiΣt (dit all possible cases of all the firms' disclosures for the year)

Where, i, t = company i in year t (pooled data).

Σ(dit disclosed for each capital's issues per firm for the year)

Computation of Human and Intellectual Capitals Reporting Scores showing the level of reporting in each of the selected firms' annual reports from 2009-2018 is shown in Table 2.

Table 2
Level of Human and Intellectual Capital Reporting in each selected firm

S/No.	Firm	N	HCR		ICR	
			Mean	SD	Mean	SD
1	Aluminum	10	0.037	0.009	0.019	0.023
2	AUSTINLAZ	10	0.085	0.045	0.012	0.036
3	Bata Glass	10	0.054	0.032	0.074	0.025
4	Berger	10	0.077	0.026	0.076	0.014
5	BOC Gases	10	0.054	0.038	0.050	0.015
6	CAP PLC	10	0.126	0.099	0.091	0.022
7	CCNN PLC	10	0.061	0.037	0.063	0.021
8	CUTIX	10	0.061	0.048	0.035	0.023
9	Dangote	10	0.077	0.035	0.088	0.027
10	DNM	10	0.045	0.046	0.063	0.019
11	First AUU	10	0.055	0.035	0.014	0.026
12	FTNCOCOA	10	0.038	0.028	0.022	0.024
13	Greif	10	0.035	0.013	0.047	0.062
14	Laferge	10	0.161	0.041	0.086	0.037
15	Livestock feeds	10	0.058	0.030	0.008	0.024
16	Multiverse	10	0.048	0.039	0.029	0.031
17	NOTORE	10	0.062	0.043	0.058	0.024
18	OKOMU OIL	10	0.064	0.025	0.055	0.009
19	PCMN	10	0.033	0.015	0.023	0.024
20	PP & P Nig.	10	0.068	0.044	0.061	0.020
21	Premier	10	0.023	0.020	0.015	0.018
22	Presco Plc	10	0.055	0.028	0.051	0.031
23	THORASWY	10	0.064	0.028	0.044	0.029

Source: Computation by Researchers (2020), Using SPSS version 20.0

Table 2 shows the average level of Human Capital Reporting (HCR) and Intellectual Capital Reporting (ICR) in each of the manufacturing firms as reported in the annual reports. From the result, Laferge reports the highest HCR with about 16.1%. CAP Plc shows the highest value of 9.1% for intellectual capital reporting (ICR) compared with other firms. This result implies that HCR and ICR are still in are an adoptive stage of reportage among manufacturing firms in Nigeria.

Table 3
Descriptive Statistics for the Research Variables

Variables	N Statistic	Minimum Statistic	Maximum Statistic	Mean Statistic	Std. Deviation Statistic	Skewness Statistic	Skewness Std. Error	Kurtosis Statistic	Kurtosis Std. Error
Human Capital Reporting	230	0.0000	0.398	0.063	0.047	2.192	0.160	10.851	0.320
Intellectual Capital Reporting	230	0.0000	0.212	0.047	0.037	0.581	0.160	0.861	0.320
ROA	230	-0.516	1.732	0.110	0.207	3.581	0.160	23.716	0.320

Source: Researchers' Computation (2020) using SPSS version 20.0.

Table 3 presents the descriptive statistics for the research variables. Result shows mean values of 0.063, 0.047, and 0.110 with a standard deviation of 0.047, 0.037, and 0.207 respectively for Human Capital Reporting (HCR), Intellectual Capital Reporting (ICR), and Returns on Assets (ROA) of the sampled quoted manufacturing companies in Nigeria. The skewness values are 2.129, 0.581, and 3.561 for HCR, ICR, and ROA respectively. The skewness values obtained for all the variables were greater than zero (0) which implies that the variables all skewed to the right of the standard normal curve. This is an indication of the fact that within the period of study, the values of these variables increased more than it decreased. The kurtosis values were 10.851, 0.861, and 23.716 for HCR, ICR, and ROA respectively, indicating that the research variables were all leptokurtic. The normality of these variables was further examined using the Shapiro-Wilks test as presented in Table 4.

Table 4
Summary of Normality Test Using Shapiro – Wilk Test for the Research Variables

Variables	Shapiro – Wilk Statistic	DF	P-Value
Human Capital Reporting (HCR)	0.840	230	0.0000
Intellectual Capital Reporting (ICR)	0.928	230	0.0000
Returns on Assets (ROA)	0.724	230	0.0000

Source: Researchers' computation (2020) using SPSS version 20.0

Table 4 result reveals that all the research variables have probability values of 0.0000 and less than 0.05 (p < 0.05) which indicates that the data obtained from the variables are not normally distributed.

Table 5
Regression Summary of Results of the Model

Model	R.	R-square (R^2)	Adjusted R^2	Std. Error of the Estimate	Durbin-Watson
1	0.384	0.148	0.132	0.193	2.039

Source: Researchers' computation (2020) using SPSS version 20.0

Table 5 presents a summary of the result of the effect of Human and Intellectual Capitals reporting on profitability (ROA) of the listed manufacturing firms sampled for this study. From the result, the coefficient of determination (R2) value of 0.148 (14.8%) reflects the overall contribution of the independent variable to the dependent variable (profitability). The adjusted coefficient of determination value is 0.132 (13.2%) showing that the independent variables only account for the variation of the dependent variable to that level of magnitude while other variables not captured in the model account for 0.868 (86.8%). The Durbin-Watson statistic of 2.039 was obtained for the model which is greater than 1 and less than 3.00 meaning that there is the absence of autocorrelation among the variables of the study.

Table 6
Result of Analysis of Variance (ANOVA)

Model	Sum of squares	df	Mean square	Focal	F-crit.	P-value
Regression	1.453	4	0.363	9.735	2.412	0.000
Residual	8.396	225	0.037			
Total	**9.849**	**229**				

Source: Researchers' computation (2020) using SPSS version 20.0

Table 7
Coefficients of the Regression Results for the Variables of Study

Model	Unstandardized coefficients		Standardized coefficient			Collinearity statistics	
	B	Std. Error	Beta	t-cal	P-value	Tole-rance	VIF
Constant	0.053	0.029		1.840	0.067		
Human Capital Reporting (HCR)	0.818	0.325	0.187	2.518	0.013*	0.689	1.452
Intellectual capital reporting ICR)	1.832	0.366	0.323	5.009	0.000*	0.911	1.097

*Significant at 5% (p < 0.005), t-critical = 1.97.

Source: Researchers' computation (2020) using SPSS version 20.0

The result shows an F-calculated value of 9.735 and a P-value of 0.0000 compared to the F-critical value of 2.412 at a 0.05 level of significance. This implies that there is a significant regression relationship between the independent variables and the dependent variable. This also indicates that HCR and ICR jointly accounted for significant variation in the profitability of the listed firms.

Table 7 shows the regression coefficient for the model parameters of the effect of the independent variables on the dependent variable. The result shows that Human Capital Reporting and Intellectual Capital Reporting have positive significant influence on profitability (ROA), HCR (â = 0.187, t = 2.518, p = 0.013) and ICR (â = 0.323, t=5.009, p = 0.000). The standardized beta coefficient of 0.187 for HCR implies that if other variables are held constant, for every N1 increase in human capital reporting, the return on asset of the listed manufacturing firms will increase by N0.187, and a 0.323 standardized beta coefficient was obtained for ICR. This implies that if other variables are held constant, for every N1 increase in intellectual capital reporting, the return on an asset will increase by N0.323.

Also, the presence of multicollinearity was checked using the variance inflation factor (VIF) and tolerance level. The tolerance values of 0.689 and 0.911 and VIF values of 1.452 and 1.097 for HCR and ICR respectively are greater than 0.1 for tolerance level and less than 10 for VIF indicates that there is no evidence of multicollinearity.

4.2. Model Evaluation and Test of Hypotheses

The test of hypotheses is carried out from the statistical results under the model evaluation. The estimated model parameters is presented as follows:

ROAit   = 0.053 + 0.187HCR + 0.323ICR + 0.029

t-cal   = (2.518) (5.009)

std. error = (0.325) (0.366)

P-value   = (0.013) (0.0000)

Hypothesis I

Ho_1 : There is no significant influence on human capital reporting on profitability (ROA) of the listed manufacturing firms in Nigeria.

From the model evaluation and results on Table 7, it is revealed that human capital reporting (β = 0.187, SE = 0.325, t-cal = 2.518, p-value = 0.013, p-value < 0.05) has positive influence on profitability (Return on Assets) of the selected listed firms. The calculated t-value of 2.518 is greater than the

critical t-value of 1.97 at a 0.05 level of significance. The null hypothesis is rejected meaning that human capital reporting has a significant positive influence on the profitability (Returns on Assets) of the listed manufacturing firms. The results obtained agree with the views of Okpako, Atube, and Olufawoye (2014) and Oko (2018); who found a significant influence of HCR on firms' profitability. This is attributed to the fact human capital asset is the driving asset of any organization which propels other assets to enhance productivity and profitability of the entities.

Hypothesis 2

Ho_2 : There is no significant effect of intellectual capital reporting on profitability (ROA) of the listed manufacturing firms in Nigeria.

The model evaluation in respect of intellectual capital reporting reveals (β = 0.323, SE = 0.366, t-cal = 5.009, p-value = 0.0000, p-value < 0.05) has positive effect on profitability of the listed manufacturing firms. The calculated t-value of 5.009 is greater than the t-critical value of 1.97 at a 0.05 level of significance. The null hypothesis is rejected, indicating intellectual capital reporting has a significant effect on the profitability of the listed manufacturing firms.

The result agrees with the findings of Zehri Abdelbaki and Bouabdellah (2012), Sidharta and Affandi (2016), and Ewereoke (2018), who also found Intellectual Capital Reporting contributes to the creation of Value of organizations, thereby increasing the firms' profitability. The result is in line with *apriori* expectation and the fact that the business environment is now dominated by knowledge and intellectual or virtual assets.

SUMMARY AND CONCLUSION

The main aim of the study was to examine the effect of human and Intellectual capital reporting on manufacturing firms' performance in Nigeria. From the findings, it is revealed that most of the listed manufacturing firms are yet to embrace human and intellectual capital reporting despite the global shift to disclosing these categories of assets particularly in the phase of the digital and virtual economy landscape.

Human and intellectual capitals reporting from the data analyses disclose positive and statistical significance on the profitability of the listed manufacturing firms in Nigeria throughout the study. It is therefore recommended that manufacturing firms in Nigeria should invest more inhuman and intellectual capital in the form of training and retraining of staff as well as human resources management. More so, more digital asset

investments in the area of artificial intelligence and other expert software packages should be embarked upon to improve the output, product quality, and profitability of the organization.

It is suggested that further studies be conducted on the same topic in other sectors of the economy as well as an investigation of the impact of relational capital on the performance of manufacturing firms in Nigeria.

5.1. Limitation of the Study

Data used for the research are limited to the period between 2009 and 2018 because some selected firm's reports were not available outside this period. The study is based on one sector (that is, the manufacturing sub-sector) of the Nigerian economy. Also, ten years' financial reports for twenty-three (23) companies selected purposively pooled. These might not be a good representation of all companies engaged in one activity or the other in the Nigerian economy in particular and globally in general. However, the results and inference from the study are considered reliable and relevant to business decision making.

5.2. Implications from the study Findings

The business implications of the findings are as follows:

i) The manufacturing firms' management and practicing accountants are motivated by the results to report their performance regarding human and intellectual capital issues.

ii) The researchers in sustainability reporting would use the findings to expatiates on the impact of human and intellectual capital as components of integrated reporting.

iii) The regulatory bodies are to realize the level of human and intellectual capital reporting and the need for compliance with integrated reporting.

References

Abeysekera, I. and Guthrie, K. (2002). Status of intellectual capital reporting in Sri Lanka: A Research Note. Macquarie Graduate School of Management, Sydney, Australia: 1-19.

Adebawojo, O. A. (2017). Organizational performance and growth: The mediating role of human asset accounting in Nigeria banking industry. *Journal of Humanities and Social Science,* 22(1).pp.24-29.

Barkat, W., and Beh, L. S. (2018). Influence of Intellectual capital dimensions on knowledge process capability and organizational performance. *Asian Journal of Scientific Research,* 11(3), pp. 308-318.

Colman, R. (2004). Satisfied Stakeholders. *CMA Management Journal,* 78(1),pp. 56-64.

Dess, G. D.; and Picken, J. C. (2000). Beyond productivity: How leading companies achieve superior performance by leveraging their Human Capital. New York. *American Management Association Journal*, 65(2)pp. 1146-1161.

Ekundayo, O. U., and Odhigu, F. (2016). Determinants of human capital accounting in Nigeria. *Igbinedion University Journal of Accounting,* 1(2),pp.103-117.

Elkington, J. (1997). *Cannibals with forks – Tripple Bottom Line of 21st Century Business.* Stoney Creek, C. T. New Society Publishers, 234p.

Ewereoke, V. (2018). Effect of Intellectual Capital on Performance of Firms Listed on the Nigerian Stock Exchange. *Research Journal of Finance and Accounting.* 9(8). pp.134-147.

Idekulim, P. C. (2014). T*each yourself Group Accounting (Fully IFRS compliant).* Yaba, Lagos. Picks Global Concept: 576p.

Izedonmie, P. F., Odeyile, L. G., and Kuegbe, K. (2013). Human Resource Accounting and its impact on organizational performance. *Journal of Economics and Sustainable Development*, 4(5),pp.50-56.

Ismail, T. H. (2008). Intellectual capital reporting in a knowledge economy: evidence from Egypt. International Conference on Economic Directions III: The College of Business Administration, Kuwait University, 34p.

Morros, J. (2016). The Integrated Reporting: A Presentation of the current state of art and aspects of integrated reporting that needs further development Intangible Capitals, 12(1),pp.1-8.

Neysi, S. H., Mazrach, S., and Mousavi, Z. (2012). The importance of intellectual capital disclosure. *International Journal of Business and Social Science,* 3(15),pp. 307-310.

Oko, S. U. (2018). Human asset accounting and its impact on the performance and financial position of firms: A study of selected companies. *Account and Financial Management Journal*, 3(8),pp.1703-1712.

Okpako, P. O., Atube, E. N., and Olufawoye, O. H. (2014). Human resource accounting and firm performance. *Global Journal of Commerce and Management,* l3(4),pp. 232-237.

Oladele, P. O., Aribaba, F. O., Ahmodu, O. L., and Omobola, M. A. (2018). An empirical study of human resource accounting disclosure on the financial performance of selected sited firms in Nigeria. *Journal of accounting and management,* 8(2),pp. 70-82.

Organization for Economic Cooperation and Development (OECD) (2004). *Principles of Corporate Governance,* 11p.

Perera, A., and Thrikawala, S. (2012). Impact of human capital investment on firm financial performances: An empirical study of companies in Sri Lanka. *Journal of Intellectual Capital,* 54(3),pp.11-16.

Riahi-Belkaoui, A. (2004). *Accounting Theory* (5th ed.) The USA.: South-Western Cengage Learning, 285p.

Sidhata, I. and Affandi, R. (2016). The empirical study on the intellectual capital approach toward financial performance in rural banking sectors in Indonesia. *International Journal of Economics and Financial Issues*, 6(3),pp. 1247-1253.

Turker, I. and Sayer, A. R.(2014). The relationship between integrated reporting and financial reporting. *Management Studies,* 2(7),pp.465-478.

Vergauwen, P. G., and Vanalem, F. J. (2005). Annual Reports: Intellectual Capital disclosure in the Netherlands, France, and Germany. *Journal of Intellectual Capital,* 6, pp.89-101.

Wild, S., and Van-Staden, C. J. (2013). Integrated reporting. Initial analysis of early reporters – an institutional theory approach. *7th Asia-Pacific Interdisciplinary Accounting Research Conference* (Kobe): 26-28p.

Zehri, C., Abdelbaki, A.; and Bouabdellah, N. (2012). How intellectual capital affects a firm's performance? *Australian Journal of Business and Management Research,* 2(8), pp.24-31.

APPENDIX

CONTENT ANALYSIS CHECKLIST

A. HUMAN CAPITAL REPORTING

    i.   Number of employees/employment

    ii.   Diversity in board management

    iii. Total Investment / Cost in Staff Training

    iv. Average Staff Age

    v.   Employee survey results

    vi. Injuries per million working hour

    vii. Minimum wage ratio.

B. INTELLECTUAL CAPITAL REPORTING

    viii. Number of patent applications/initiatives field

    ix. Money spend on R & D

    x.   Number of awareness and potential efforts

    xi. Brand awareness and potential efforts

    xii. Number of new products developed

    xiii. Sales generated by R & D developed

    xiv. Expenditure on Software / Change / Process development