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Determinant of Human Capital Disclosure in the Post IFRS Regime: An Examination of Listed Firms in Nigeria

Mutalib Anifowose, Hafiz Majdi Ab. Rashid and Hairul Azlan Bin Annuar
Department of Accounting,
Kulliyyah of Economics and Management Sciences,
International Islamic University Malaysia

ABSTRACT

This paper examines the possible determinants of human capital disclosure among listed firms in Nigeria. This paper reports the results from a longitudinal panel data based on 442 observations of firms listed on the main board of Nigeria Stock Market for the period 2012–2014. The paper contributes to the literature by extending previous determinants of intangible asset disclosure studies by considering the Nigerian economic and business environment due to recent adoption of international financial reporting standards. Based on agency and proprietary cost theories, the study employed seven possible determinants of voluntary disclosure and developed a checklist for human capital based on prior studies. The results of longitudinal data analyses indicate a significant positive influence on firm's age, size and industry classification on human capital disclosure whereas the auditor type, profitability, inherent risk and joint audit have a significant negative influence on the of disclosure. The findings have practical implication for financial reporting council of Nigeria in developing HC disclosure standards and investors might utilise the findings in investment decision making process.

Keywords: *Intangible asset, Human capital, Voluntary disclosure, IFRSs, Nigeria*

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INTRODUCTION

Economic theories have commonly recognised four basic factors responsible for the survival of corporate entities (e.g., Uzawa, 1962). These factors are basically classified as land, labour, capital and entrepreneur. Of the four basic factors, land and capital are often captured adequately in the financial statement due to regulatory framework and recognition criterial of International Accounting Standard Board (ISAB) while the labour and entrepreneurship fail the recognition benchmarks due to their "soft" nature. Looking at their "soft" nature, prior studies have tagged them as "human-centred asset" (e.g., Brooking, 1996; Edvinsson, 1997). Specifically, Brooking (1996) term these assets human capital HC and defined it as the "collective expertise, creative capability, leadership, entrepreneurial and managerial skills embodied by the employees of an organization".

However, due the recent transformation of economy from traditional to modern otherwise known as "knowledge based economy" where a company's success has been greatly attributed to intangible assets (e.g., Baruch, 2001; Edvinsson & Malone, 1997; Stewart & Ruckdeschel, 1998), corporate's human capital has specifically been regarded as a valuable resource and a key factor for sustainable competitive advantages (Stewart & Ruckdeschel, 1998). Despite the identified potentialities of human assets towards organisation's survival (e.g. Möller, Gamerschlag, & Guenther, 2011), the employees' information in most developing economies like Nigeria is still predominantly voluntarily disclosed, scarce, non-standardised and thus it is difficult to synthesise from annual reports (Lajili & Zeghal, 2006). Also, studies have documented that firms disclose human capital at will and based on their certain features (Alam & Deb, 2010; Dominguez, 2012; Huang, Luther, Tayles, & Haniffa, 2013; Jindal & Kumar, 2012). Thus, the main objective of this study is to examine the specific features that influence the disclosure of human capital information in annual reports and accounts of listed firms in Nigeria.

While most of prior studies have considered human capital alongside intellectual capital analyses (e.g., Abdolmohammadi, 2005; Abeysekera, 2008; Bontis, 2003; Bozzolan, Favotto, & Ricceri, 2003; Branco, Delgado, Sousa, & Sá, 2011), only few have considered HC alone and mainly focused on its extent only (e.g., Huang et al., 2013; Lin, Huang, Du, & Lin, 2012;

Motokawa, 2015). Also, there are a few studies on the determinants of HC disclosures (e.g., Cormier, Aerts, Ledoux, & Magnan, 2009; Jindal & Kumar, 2012; Kateb, 2015; Möller et al., 2011; Uyar & Kılıç, 2013). The focus of studies conducted on Nigerian listed firms has still been narrow and has remained confined to measuring the extent of IC (HC) disclosures of only banking industry firms (Haji & Mubaraq, 2012). Authors are yet to note any study which has investigated determinants of HC disclosures of listed firms in Nigeria using a broad base sample of firms, belonging to a variety of sectors following the IFRSs adoption in the Nigerian context.

The study employed information from annual reports and accounts of 91 listed firms that cut across all the economic sectors in Nigeria to examine the determinants of HC disclosure for three fiscal years of 2012, 2013 and 2014 by mainly focusing on post adoption of international financial reporting standards in the country. A 24-item index was developed to measure the level of HC disclosure and this was later regressed on firm-specific characteristics of size, industry affiliation, profitability, age, inherent risk, joint audit, and auditor type using panel data analysis. The findings from the analyses revealed that firm size, age and industry affiliation have a significant positive influence on the quality of HC disclosure of the listed firms in Nigeria. The results also indicated contrary to our expectation, a significant negative impact of auditor type and joint audit while it failed to document significant impact of profitability and risk on quality of HC disclosure over the period of study. The study contributes to literature of intangible assets accounting research by developing a suitable index to measure the level of HC disclosures in annual reports and accounts of listed firms in Nigeria. Besides, this study is first to examine the determinants of HC disclosures of traded companies from the "emerging market" of Nigeria. The subsequent parts of this paper is arranged in the following orders. Section 2 provides a review of literature on HC disclosure and the hypotheses were formulated based on theoretical and empirical evidences in Section 3. Sections 4 and 5 provide the methodology adopted by this study, and presentation of the results and analysis of the findings, respectively. Section 6 provides the conclusions emanated from this study.

LITERATURE REVIEW

IFRSS and Human Capital Disclosure: A Case of Nigeria

Due to the separation of ownership from management of business organisations globally, the need for an account of stewardship from the latter to the former becomes inevitable and as such, standards have been issued by various jurisdictions to ensure adequacy of accountability. Hence, in 2003, Nigeria Accounting Standard Board (NASB) Act was enacted to issue the Statements of Accounting Standards hereafter known as SAS. Since then, there have been 31 accounting standards issued by NASB covering various treatments, recognitions and disclosures of economic transactions among public companies in the country, most especially those of the listed firms.

In this NGAAP regime in Nigeria, human capital accounting is guided by requirements of statement of Accounting Standard Number 8 on Accounting for Employees' Retirement Benefits. While the standard specifies accounting for some particular elements of human capital such as defined benefit plans or equity-based compensation benefits, there is no clear disclosure requirement for human capital. Meanwhile the disclosure of aggregated human capital cost is stipulated by Statement of Accounting Standard 2 Information to be disclosed in financial statements. This standard recommends that expenses should be classified by function where the total costs are presented such as cost of sales, administrative costs, selling costs, thus, human capital cost is not separately reported unless that firm discloses additional information in the notes. As a result, empirical research on costing or valuing human capital in Nigeria relies on voluntary disclosure of human capital in the NGAAP period.

Following the adoption of IFRS in 2012, several changes to human capital-related cost disclosure were introduced. First, the new IAS 19 Employee Benefits and IAS 26 Employee Retirement Benefits which superseded the former SAS 8 Accounting for Employees' Retirement Benefits, clearly categorises human capital related cost in a more dynamic manner, and describes related disclosure requirements corresponding to each human capital related cost item. Though the new IAS 19 still does not demand the specific disclosure of an overall labour cost, it does mandate that disclosure practices shall be compliant with other standards such as

IAS 1 Presentation of Financial Statements. The most critical change that can be found in IAS 1 is that if a firm classifies its expense by function, the firm should disclose additional information on the nature of expense (paragraph 93 of IAS 1). Paragraph 94 gives the reason that the nature of expense is required because it is useful in predicting future cash flows and state that "even when management opts to classify expenses 'by function' on the face of the financial statements, they should also report it 'by nature' in the notes to accounts". Thus, the overall human capital related cost should be reported somewhere in financial statements by listed firms in Nigeria following the IFRSs adoption. Amusingly, however, the disclosure of information concerning sub-components such as wages and salaries, bonuses, other compensation, etc., still remains optional.

Human Capital Disclosure

The relevance of financial statement is often debated over the years among the various stakeholders. The statement is a function of economic reality within the firm with little or no reference to events outside the firm. This is a basic assumption of historical cost accounting. Meanwhile, with the emergence of "knowledge based economy", the relevance of financial information in the annual reports has come under serious criticisms due to a significant difference between the book and market value of listed firms. The stakeholders, most especially those in business (e.g., Edvinsson & Malone, 1997; Stewart, 1991), attributed the difference to certain hidden items that fail to pass the recognition benchmarks of financial reporting framework. This hidden value is generally considered as intellectual capital IC (Bontis, 2001; Pulic, 1998, 2000, 2004).

One of the basic components of intellectual capital is human capital which is made of labour efforts and entrepreneur skills (Abhayawansa & Abeysekera, 2008). Literatures have opined that human capital, including the knowledge, skills, and abilities owned by organisational employees and management teams, is a core and unique strategic resource that drives value most especially in knowledge intensive organisations (e.g., Bontis, 1996; Megna & Klock, 1993; Stewart, 1991). The contribution of human capital to entity performance has been documented in prior studies (e.g., Peña, 2002). Corporate organisations have put concerted efforts on the policies and disclosures practices of HC, both from advanced and

advancing economies (Abdolmohammadi, 2005; Abeysekera & Guthrie, 2004; Abhayawansa & Abeysekera, 2008; Alam & Deb, 2010; Jindal & Kumar, 2012). Studies have suggested that human capital disclosure is of great importance in the current knowledge driven economies (e.g., Bontis, 2003; Edvinsson & Sullivan, 1996). The HC disclosures have been argued to be a communicating strategy and way of retaining top notch talent in the corporate organisations (Mouritsen, Bukh, & Marr, 2004).

A number of prior studies have examined the determinants of HC disclosures using different country and economic settings, though, the findings remain mixed. For instance, Kateb (2015) assessed the determinants of HC disclosures of High Tech firms in France for fiscal years 2006–2010. Also, Uyar and Kılıç (2013) examined the factors influencing the level of HC disclosures in 2010 annual reports among listed firms in Turkey's manufacturing sector. In India, Jindal and Kumar (2012) investigated the possible determinants of HC disclosures in the 2009 annual reports and accounts of listed entities. In addition, Alam and Deb (2010) considered the possible factors that determine the level of HC disclosures among listed firms in Bangladesh. Similarly, Ousama, Fatima, and Hafiz-Majdi (2012) considered the determinants of IC (including HC) disclosures in 2006 annual reports of some selected firms on Bursa Malaysia, while Abdul Rashid, Kamil Ibrahim, Othman, and Fong See (2012) considered the determinants of IC (including HC) disclosures in the IPO of Malaysian firms over the period from 2004 to 2008 and revealed mixed results. The detailed explanation of findings from these studies are presented below under the hypotheses' development.

THEORETICAL FRAMEWORK

The present study is anchored on two theories of voluntary disclosure, which are agency and proprietary cost theories. Agency theory opines that an organisation benefits from high levels of disclosure by reducing agency costs, while proprietary costs theory opposes the argument and posit that the more disclosure, the more operating expenses would be and thus, increasing proprietary costs (e.g., Dye, 1986; Verrecchia, 1990; Wagenhofer, 1990). The costs of disclosure include: costs of preparation and dissemination of annual reports; costs concerning earnings per share evaluation and the

cost of "competitive advantage loss due to reactions from competitors drawn from the disclosure of company information" (Dye, 1986; Elliott & Jacobson, 1994; Wagenhofer, 1990). Based on these contrasting views, it could be deduced that disclosure of IC information by "those charged with governance" might be influenced with several elements that are attributes of a corporate entity. The agency theory opines that the more the disclosure level, the lower would be a conflict of interest between principal (owners) and agent (those charged with governance), which resulted from information inequality problem. Thus, in line with "modern economy" concept, there is a preposition that "the higher HC disclosure firms make, the less information asymmetry will remain, leading in turn to lower agency costs" (Uyar & Kılıç, 2012).

CONCEPTUAL FRAMEWORK

Based on the underpinning theory and the established association between voluntary disclosure and information asymmetry, the current study proposes the following conceptual framework.

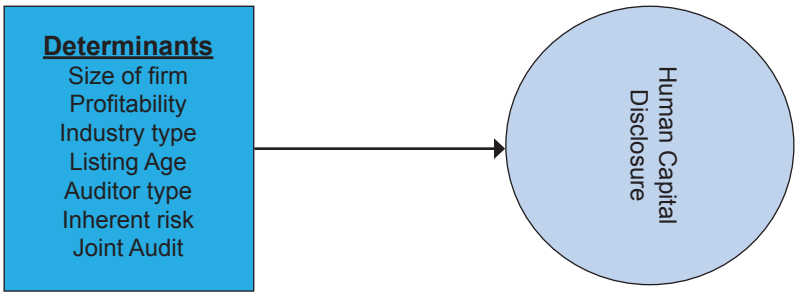

Figure 1: Conceptual framework utilised in the study

The dependent variable is measured as quantity of overall human capital disclosure volatility while independent variables are potential determinants of is HC disclosure.

HYPOTHESES DEVELOPMENT

Based on underpinning theories and the empirical evidence on the determinants of voluntary disclosure, the present study proposes the following seven hypotheses.

HC Disclosure and Size of Firm

Studies have documented firm size to be one of the determinants of corporate disclosures, as larger firms might disclose more information as their stakeholder might be larger and, thus, they require more information to satisfy a greater number of stakeholders. Prior research works have documented the direct link between firm size and the level of disclosures. However, the link between HC disclosure and size of companies has been examined and findings remain inconclusive (e.g., Jindal & Kumar, 2012; Kateb, 2015; Möller et al., 2011; Uyar & Kılıç, 2013). Uyar and Kılıç (2013) for instance, investigated the impact of firms' size on HC disclosure of traded manufacturing companies in Turkey over a period of 2006–2010 and documented a significant positive relationship between the two variables. Also, Alam and Deb (2010) revealed a significant direct correlation between corporate entity's size and level of HC disclosure among listed firms in Bangladesh. In a related study, Dominguez (2012) examined the relationship between HC disclosure and firm size of listed firms in Spain in 2004 financial year, and found a significant association between variables. Contrarily, Kateb (2015) examined the relationship between 55 listed companies in France but failed to report any significant association between HC disclosure and corporate size. Hence, based on the above discussion and stakeholder theory, the first hypothesis is as follows:

H_1: *There is a significant positive association between firms' size and quality of human capital disclosure.*

Profitability and HC Disclosure

Financial performance may also affect human capital disclosures. Since human capital is regarded as a valuable organisational resource (e.g., Chadwick & Dabu, 2009; Harrison & Sullivan, 2000), a positive association can be assumed between profitability and human capital disclosures.

Generally, earlier studies on the corporate performance and level of corporate disclosure failed to agree on the direction of relationship. While some studies documented a significant positive association (e.g., Singhvi & Desai, 1971; Wallace & Naser, 1996), others failed to establish the significant association (Brammer & Pavelin, 2006; Hossain & Hammami, 2009). Specifically, the association between corporate profitability and overall IC disclosure (including HC) extent has been documented by (Ousama et al., 2012) in a Malaysian context and Dammak, Triki, and Boujelbene (2008) in the European context. Also, Kateb (2015) failed to document any significant impact of corporate performance on HC disclosure among listed firms in France. This study proposes a positive significant relationship between HC disclosure and corporate performance of listed firms in Nigeria following the adoption of IFRSs based on proposition of agency theory as follows:

H_2: *There is a significant positive association between profitability and quality of human capital disclosure.*

Industry Type and HC Disclosure

It has been suggested that industrial affiliation might significantly affect the quality of voluntary disclosure by corporate entities (Naser, Al-Khatib, & Karbhari, 2002). Watson, Shrives, and Marston (2002) and Cooke (1989) documented a significant effect of entity's industrial affiliation to volume of voluntary disclosure in UK and Sweden respectively. Specifically, Alam and Deb (2010) documented that financial industry firms report more HC information than any other industries in Bangladesh. In the same vein, Kamath (2008) examined general IC disclosure practices of 30 Indian Teck firms in 2005–2006. The author revealed that, out of Teck firms, Information Technology firms made the highest disclosures followed by Telecom firms, and Media firms made minimal disclosures. However, Jindal and Kumar (2012) failed to document any significant association between HC disclosure and industry affiliation of Indian listed firms using annual reports based on GAAPs. The possible difference from the findings of the two studies in India might result from the fact that the latter examined the annual report based on GAAPs, while the study favoured more disclosure based on IFRSs. In an attempt to distinguish modern economy from the traditional, one has made studies assume the likelihood of industry variables to influence the quantum of HC disclosure (Jindal & Kumar, 2012). Thus,

prior studies on IC disclosure confirmed the significant effect of industrial type on aggregate IC (including HC) disclosure (e.g. Abdolmohammadi, 2005; Bozzolan et al., 2003). Hence, it can be proposed that the industry type of listed firms in Nigeria should have an influence on quality of HC disclosure based on legitimacy theory and empirical studies explained above. Thus, the next hypothesis is formulated as follows:

H_3: *There is a significant direct relationship between industry type and quality of HC disclosure.*

Listing Age and HC Disclosure

A listed firm is adjudged to be a public firm that affects and is being affected by its environment. Once a company's instrument is listed on an official stock market, it is commonly assumed that the firm assumes another status and shall be responsible in line with the legitimacy theory. As enumerated by Owusu-Ansah (1998):

> *"Younger companies may suffer competitive disadvantage if they disclose certain items such as information on research expenditure, capital expenditure, and product development. The cost and the ease of gathering, processing, and disseminating the required information reduce with age of a firm. The younger companies lack historical records to rely on for public disclosure and therefore may have less information to disclose."*
>
> *Earlier studies have failed to agree on the pattern of relationship between listing age of corporate organisations and level of voluntary disclosure. Generally, Hossain and Hammami (2009) examined the impact of corporate listing age on level of voluntary disclosures by Qatar firms and documented a significant positive effect. Specifically, Alam and Deb (2010) and of recent Kateb (2015), examined the determinants of voluntary HC disclosure and found insignificant relationship between the two variables. While the former studied listed firms in Bangladesh, the latter investigated 55 listed companies in France over the period 2006–2010. Also, Jindal and Kumar (2012) documented an insignificant relationship between HC disclosure and firm's*

age among the listed firms in India. Based on conjectures that listing age of listed firm in Nigeria should explain their quality of HC disclosures:

H_4: *There is a significant direct relationship between listing age and quality of HC disclosure.*

Auditor Type and HC Disclosure

One of the responsibilities of an external auditor is ensuring sufficient appropriate disclosure is made by "those charged with governance" in order to minimise the agency costs. Hence, the type of auditor could be assumed to give an impact on the quality of information disclosed in the corporate annual reports and accounts. Studies have documented the influence of auditor type on the disclosure practice among public listed firms across the world. As posited in Wallace and Naser (1996), the size of audit firm influences their power to assert control on management on the quality of information to be disclosed. Thus, large firms could demand for more disclosures compared to small firms.

Also, Patton and Zelenka (1997) revealed that there is significant high level of disclosure relating to Big Four audit firms compared to small firms. Specifically, a few studies have examined the intellectual (including HC) disclosure and the findings remained inconclusive. For example, Oliveira, Rodrigues, and Craig (2006) examined the association between the extent of IC disclosure and type of audit firm and revealed a significant result. The author argued that firms audited by big four firms disclosed more IC information than non-big four firms in the Portugal stock market. Similarly, in a cross sectional-analysis of listed firms in Australia using 2006 annual report, Whiting and Woodcock (2011) found that entities with Big Four auditing firms showed more extensive IC disclosure than non-Big Four auditors.

Contrarily, Jindal and Kumar (2012) failed to document any significant association between type of auditor and level of HC disclosure of listed firms in India using annual report prepared based on GAAP. Jindal and Kumar (2012), Ousama et al. (2012) Whiting and Woodcock (2011) and Oliveira et al. (2006) are among the earlier studies that tested the auditor

type hypothesis and the findings remained inconclusive. Though, there is an assertion that firms have more agency problems with high big auditor in order to minimise the agency cost, audit fees for Big Four auditors are much, thus, increases the proprietary costs. Appointing Big Four firms and disclosure of more information would amount to higher proprietary costs. Hence, it is expected that the using of Big Four audit firms to minimise the agency problem might result into moderately lower disclosure in order to manage operating expenses. Accordingly, the study advances the proposition as follows:

H_5: *Big Four audit firms are significantly related to the quality of IC disclosure.*

Inherent Risk and HC Disclosure

There is a general belief that firms that are riskier disclose more information about their activities in order to appease to different stakeholders outside the firms (Cormier, Gordon, & Magnan, 2004). This is in line with the stakeholder theory. Also, there is a belief that corporate firms with higher risks are subject to higher agency cost and could disclose more information to reduce the information asymmetry between owners and "those charged with governance" (Jensen & Meckling, 1976). Integrating stakeholder and agency theories, the study assumed a direct relationship between inherent risk and HC disclosure of listed corporate firms in Nigeria. Hence the next hypothesis is as follows:

H_6: *There is a significant relationship between inherent risk and quality of HC disclosure.*

Joint Audit and HC Disclosure

A joint audit is a situation whereby at least two audit firms are jointly responsible for auditing a client. In order to improve the efficiencies of audit assignments, some corporate entities appoint more than one audit firm to carry out the audit engagement. It is generally believed that joint audit could help in ensuring the quality of the audit assignment and guaranteeing a better opinion. In line with this benefit, it is expected that joint audit could improve the quality of audit work and promote sufficient disclosure.

Similarly, companies engage joint audit to ensure the financial statement is prepared and represents a true view of their organisation's performance and position. A joint audit would be more effective in minimising the agency problem and subsequently reducing agency cost. Also, joint audit increases the operating costs which eventually reduces the return to shareholders. Hence, the study proposed that a joint audit would influence the quality of IC disclosure among the listed firms in Nigeria as follows:

H_7: *Joint audit significantly affects the quality of IC disclosure.*

METHODOLOGY

The present study examined the determinants of HC disclosures in the annual report and account of listed firms in Nigeria for three years, from 2012–2014 following the adoption of IFRSs in 2012. HC information was extracted from annual reports and accounts in line with prior IC disclosure studies (e.g., Abeysekera, 2008; Haji & Ghazali, 2012; Haji & Mubaraq, 2012; Oliveras, Gowthorpe, Kasperskaya, & Perramon, 2008) as they are the most significant documents that provide the result of stewardship from the management to corporate stakeholders, especially residual owners (Beretta & Bozzolan, 2004; Deegan & Rankin, 1997). Annual reports also have a high degree of reliability and credibility compared to other information (Neu, Warsame, & Pedwell, 1998).

Dependent Variable

The study utilised content analysis (CA) to generate information to the purpose of analyses. An important component of CA is to structurally amplify a checklist that could enable us to categorise the content units. Consequently, following the review of prior studies (Huang et al., 2013; Jindal & Kumar, 2012; Lin et al., 2012; Möller et al., 2011; Motokawa, 2015), the present study developed a checklist after familiarising the pattern of HC disclosure of sampled firms. 24 items of human capital disclosures were developed and utilised in the present study (*see Table 1 for details*). To ensure reliability and validity of scores, the researchers familiarised themselves with annual reports of 10 leading firms based on market capitalisation over the period of study (Haji & Mubaraq, 2012) and

thereafter, each firm's annual report and account were captured on the coding sheet developed for the exercises (Sujan & Abeysekera, 2007).

Table 1: HC Disclosures Checklist

S/N	Items	S/N	Items
1	Number of employees	13	Vocational qualifications
2	Employee diversity	14	Employee development
3	Employee equality	15	Employee flexibility
4	Employee relationship	16	Entrepreneurial spirit
5	Skills/know-how	17	Employee capabilities
6	Employee work-related competences	18	Employee teamwork
7	Employee work-related knowledge	19	Employee involvement
8	Employee attitudes	20	Employee Succession path training
9	Employee commitments	21	Safety and Health at work
10	Employee motivation	22	Employee retention
11	Employee productivity	23	Employee satisfaction survey
12	Employee training	24	Employee communication

Scoring HC Disclosure

A scoring measure on Likert scale of four (0–3) was considered in order to measure the quality of IC disclosure (e.g., Abeysekera, 2008; Guthrie, Petty, & Ricceri, 2006). Following Haji and Ghazali (2012), a score of 3 was denoted if the items were disclosed in Naira term, a value 2 if the items were disclosed in numerical form, a value of 1 was assigned should item appear in narrative form, and a value of 0 was assigned if the item did not appear in the annual report. Thus, the total scores were computed as the proportion of actual score (XS) to maximum possible score (PS) [i.e. 3 X 24=72]. The XDS of a company is obtained by:

$$XDS = \frac{XS}{PS}$$

Validity and Reliability of the Score

Validity and reliability of the scores have been the source of concern in intellectual capital disclosure in recent times (Dumay & Cai, 2014) due to inherent problems associated with the approach. To overcome this, the present study carried out a two-stage checklist scoring approach. The authors began with pilot scoring using top 10 listed corporate entities in order to create familiarisation with the annual reports. Secondly, the authors then scored the sampled annual reports independently and compared their scores. The area of difference was then rescored jointly to correct the discrepancies.

Independent Variables

Further, the study employed six variables as independent. These include firm size, industry type, profitability, age, inherent risk and audit firm categories. These variables are measured as follows:

1. **Firm's size (f_size)**
   Based on the prior works (e.g., Bozzolan et al., 2003; Ousama & Fatima, 2010; Ousama et al., 2012), the present study measured firm's size as natural log of net assets of a company at the end of a reporting year.

2. **Firm's age (f_age)**
   The age of corporate entity is considered in the present study by the year of listing on the floor of NSE to date. This is due to the fact that a corporate organisation would lose its privacy once it is listed on the recognised exchange. This is when it is referred to as 'public' company.

3. **Profitability (prof)**
   Corporate profitability is estimated by proportion of earnings before interest and tax to the total assets in line with the studies of Dammak et al. (2008) and Ousama et al. (2012).

4. **Inherent risk (risk)**
   The study measured the risk as standard deviation of daily return on each of the sampled firms over the period of study. Standard deviation is most considered as a measure of total risk being by firm which

comprises systematic and unsystematic risk (Bodie, Kane, & Marcus, 2011; Cox & Griepentrog, 1988; Fama & French, 1993).

5. **Type of audit firm (audit)**
   The study values the auditor type by dummy variable based on the studies of Fernando and Ariovaldo (2010), Ousama and Fatima (2010) and Brammer and Pavelin (2006). This is measured by a dichotomous variable which takes the value of 1 if the company is audited by one of the Big Four audit firms and 0 if it is audited by a non-Big Four audit firm.

6. **Industry type (industry)**
   Consistent with studies of Bukh, Nielsen, Gormsen, and Mouritsen (2005) and Firer and Williams (2003), a dummy variable of 1 was assigned to a firm that is a high-technology company (i.e. ICT, health care, financial services) and 0 if otherwise.

7. **Joint Audit (J_audit)**
   Dummy variable was used to measure joint audit in the present study. A value of 1 is assigned to any firm that is audited by at least two audit firms in the given year and a value of 0 is assigned otherwise.

Data Analysis Methods

To answer the research questions and test the hypotheses in the present study, the study employs a number of statistical techniques. The analyses begin with descriptive statistics to identify the minimum, maximum and average quality of HC disclosures and the proposed determinants. Furthermore, the result of descriptive statistics also confirms the normality of the series (Field, 2013; Hinton, Brownlow, McMurray, & Cozens, 2004). In order to estimate the parameters, the study employs a longitudinal panel data analysis and the estimation was done with ordinary least square. The method is considered to be more robust as compared to cross-section and pure time series analyses (for review, Greene, 2003; Gujarati, 2005; Kennedy, 2008). Thus, the estimation is made based on this stochastic model:

$$HCD_{it}=\delta_0+\delta_1 fsize_{it}+\delta_2 fage_{it}+\delta_3 prof_{it}+\delta_4 industry_{it}+\delta_5 risk_{it}+\delta_6 audit_{it}+\delta_7 Jaudit_{it}+\varepsilon_{it}$$

DATA ANALYSES AND FINDINGS

This section presents the analyses and discussions from the finding of data estimation of the present study. Table I presents the result of descriptive statistics. The table indicates that firm's age ranges from 1 to 49 years following the date of listing on the floor of the NSE with average and median value closely related at 18 years. The table shows that the mean of average of firms in the country is about 19 years since date of official listing on the floor of NSE. The basic preliminary examinations of the variables through the mean, median and standard deviation indicate seems absent of normality problem as the figures are within the range bracket as posited by various statistics authors (Field, 2013; Hinton et al., 2004).

Table 2: Summary of Descriptive Statistics

	Average	Median	Maximum	Minimum	Std. Dev.	Obs.
AGE	18.91	18	49	1	13.13	442
AUDIT	0.72	1	1	0	0.45	442
IND	0.47	0	1	0	0.50	442
JAUDIT	0.07	0	1	0	0.25	442
RISK	3.01	2.56	29.08	0	3.02	442
ROA	−0.22	0.03	1.07	−117.30	5.58	442
SIZE	10.49	10.34	12.64	6.57	0.95	442
WHCD	0.63	0.63	0.98	0.29	0.12	442

Table 3 reveals the results of correlation coefficients of the variables. The matrix indicates in overall that the association between the variables are not strong, hence indicating that multicollinearity problem will not be a major issue in the regression analysis. As suggested by Field (2013), the level of coefficient of correlation exceeding 0.8 or 0.9 could lead to a collinearity problem. However, Tabachnick and Fidell (2008) and Kennedy (2008) submitted that a cut-off of 0.7 and below may indicate absent multicollinearity among the explanatory variables.

Table 3: Correlation Coefficient Matrix

	WHCD	Risk	ROA	Size	Age	Ind. type	Audit	Joint audit
WHCD	1							
Risk	−0.034	1						
ROA	0.024	0.045	1					
Size	0.203**	0.091	0.195**	1				
Age	0.047	0.102*	−0.003	0.051	1			
Ind. type	0.179**	−0.127**	−0.052	0.150**	−0.282**	1		
Audit	−0.070	0.016	−0.029	0.438**	0.154**	−0.045	1	
Joint audit	−0.060	−0.039	0.012	−0.237**	−0.146**	0.009	0.164**	1

**, *. Correlation is significant at the 0.01 and 0.05 level respectively

Besides, a further consideration of VIF and tolerance value presented in Table 4 shows that all the variables has VIF of less than 2 and tolerance of higher than 0.5. These further suggest the absence of multicollinearity as the value are below benchmark of 10 for VIF and above 0.10 for tolerance (Field, 2013; Hill, Griffiths, & Lim, 2011; Wooldridge, 2010).

Table 4: Variance Inflation Factor and Tolerance Figure of Independent Variables

Variable	VIF	1/VIF
Size	1.45	0.687715
Audit	1.34	0.748104
Industry	1.16	0.864174
Age	1.15	0.871359
Joint audit	1.11	0.904173
ROA	1.07	0.931908
Risk	1.03	0.97208
Mean VIF	1.19	

Table 5 presents the result of longitudinal data analysis utilized in the present study. The result indicates that size of firm is significantly related with quality of HC disclosure of the listed firms in Nigeria during the period

of study at 1% level. The finding supports our first hypothesis and is line with findings of Uyar and Kılıç (2013), Alam and Deb (2010) and contradict that of Kateb (2015). In the same vein, the association between HC disclosure and corporate age is positively significant at 99% confidence level. This also confirms that the study hypothesised the relationship between the two variables and the study therefore failed to reject the hypothesis. This finding is in line with some of the prior study of Hossain and Hammami (2009) and assertion made by Owusu-Ansah (1998). Meanwhile, the finding contradicts with the findings of some of the other studies that had previously examined the relationship between the two concepts (e.g., Alam & Deb, 2010; Kateb, 2015). Similarly, the results revealed a positive significant relationship between industry type and the quality of HC disclosure among the listed firms in Nigeria at 1%. This finding is in line with the proposition made earlier in the study that firms in high tech environment utilise human capital and disclose more than those in the non-high tech industry. The finding confirms the previous studies (e.g., Abdolmohammadi, 2005; Bozzolan et al., 2003; Naser et al., 2002; Watson et al., 2002) and contradicts that of Jindal and Kumar (2012).

Also, the results show a significant negative impact of both auditor type and joint audit on HC disclosure at 1%. This is in line with the proprietary cost theory which states that firms would minimise cost in order to maximise return accrued to the shareholders. However, by appointing Big Four auditors or engaging in joint audit, they will incur more cost and then reduce volume of HC. The finding contradicts the earlier works of Whiting and Woodcock (2011) and Oliveras et al. (2008) that reveal that audit clients audited by Big Four audit firms disclose more of human capital compared to those not audited by Big Four firms. In the same vein, the result of data analysis reveals a significant negative relationship between inherent risk and HC disclosure at 5% margin of error. This could be explained by the fact that the firms do not wish to expose their weakness to the outside as this might invite negative impression towards them by the larger stakeholders. The negative association is also documented between profitability HC disclosure. This is line with earlier studies (e.g., Dammak et al., 2008; Ousama et al., 2012) that had documented a significant impact of profitability on the quality of HC disclosure.

Table 5: Summary of Longitudinal Panel Data Estimate

Variable	Coefficient	Std. Error	t-Statistic	Prob.
SIZE	0.045031	0.004705	9.571572	0.00000
ROA	−0.000822	0.000442	−1.859962	0.06360
RISK	−0.002945	0.001284	−2.29368	0.02230
JAUDIT	−0.061657	0.015841	−3.892156	0.00010
IND	0.033523	0.007812	4.291265	0.00000
AUDIT	−0.063742	0.009627	−6.620971	0.00000
AGE	0.000651	0.000307	2.119337	0.03460
C	0.186748	0.047088	3.965932	0.00010
R-squared		0.237999		
Adjusted R-squared		0.225708		
F-statistic		19.36467		
Prob(F-statistic)		0.000000		
Durbin-Watson		0.985159		

CONCLUSION AND DISCUSSIONS

The results of analyses of the present study revealed mixed findings regarding the hypothesised determinants of HC disclosure following the adoption IFRSs in Nigeria. The findings as presented above range from significant positive to insignificant negative influence. Specifically, the findings indicate that firm's size, age and industrial affiliation have significant positive influence on the quality of HC disclosure among the listed firms in Nigeria. The possible explanation for these findings might be that older companies are well known in the industry and usually are of big size because of their accumulated reserves. These are firms that have proven to be more legitimate in conducting their business and are out to protect their numerous stakeholders acquired over time.

In line with this study's proposition, auditor type and joint audit has significant negative impact on the quality of HC disclosure over the 2012−2014 fiscal years among the listed firms in Nigeria. However, one could draw from the findings that once firms hire a Big Four audit firm or utilised joint audit approach, they pay more to minimise agency cost and

consequently, disclosure of moderate items in their financial statements. There is a general preposition that a firm tries to reduce the agency problem by excessive disclosure and hiring qualified auditors. Both are with high costs. The findings from this study indicate that firms listed on the floor of NSE seem to believe in the minimisation of agency problem rather by using auditing strategies. This study documents a significant negative influence of profitability and risk on HC disclosure over the years of study. In overall, the combined effect of these items on HC disclosure as explained by adjusted R^2 is 22.5%. This means that the change in HC disclosure could be explained with about 22.5% by these seven items. The fitness of the model is confirmed by result of F*statistic* ($F=19.5$, $p<0.0000$).

There are several practical issues that could be derived from the findings of the present study by researchers and practitioners. First, future studies on the HC disclosure could utilise the disclosure index developed in the present study as a benchmark regarding listed firms in Nigeria. Second, financial reporting council of Nigeria might utilise the findings from this study when developing the financial reporting standard on human capital. Third, the investors could use the determinants of HC disclosures employed by the present study to identify the potential of HC disclosure of other firms in Nigeria. Notwithstanding the identified significances of the present study, there are several limitations which include an assumption that a financial statement is the basic source of information available to stakeholders for decision making. The addition of other sources such as media reports, press conferences, among others, could further strengthen the findings of this study. The self-developed checklist might lack some scientific judgments in the development of index.

This study seeks to examine the possible determinants of HC disclosure following the adoption of IFRSs in Nigeria. The study employed content analysis of 91 sampled firms across 10 sectorial classifications on the floor of NSE over the fiscal year of 2012 to 2014. The data were estimated using longitudinal panel data in order to take care of the possible effect of endogeneity, heteroscedasticity and contemporaneous correlation that might lead to misinterpretation of results. Based on prior studies and theories relating to corporate disclosures, the study developed seven testable hypotheses and the results from the data analyses confirmed five of them and the remaining two were rejected. The study concludes that

corporate firms' size, age, auditor type, joint audit and industry type are main determinants of HC disclosure among the listed firms in Nigeria for the fiscal year 2012–2014. Also, the firms in the country do utilise auditing strategies to minimising the agency problem. Based on the findings, it would be of great importance for future studies to examine the value relevance of HC disclosure among Nigerian firms. This might reveal more evidence regarding the finding concerning the Big Four audit firms and joint audit in the present study.

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