

# Determinants of Intellectual Capital Disclosure in Nigeria

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**Abstract:** *This work examined the determinants of intellectual capital disclosure in Nigeria. The Ordinary Least Squares data regression technique was used to analyze data. The Yamani formula for sample size determination was used to select the 65 firms quoted on the Nigeria Stock Exchange. Secondary data were used for the study and financial data of individual companies were collected from the annual reports and accounts of the companies. The result revealed that there is a positive but insignificant relationship between intellectual capital disclosure and profitability with a probability value of 0.4329 above the critical value of 0.05, while the coefficient of variation and t-statistic revealed insignificant statistic 0.506224 and 0.783029 respectively. Also, there was a positive significant relationship between intellectual capital disclosure and firm size with probability value, coefficient of variation and t-statistic of 0.0001, 0.352838 and 4.014085 respectively. Since the computed is less than the critical value of 0.05, result also revealed that there is a positive significant relationship between intellectual capital disclosure and financial leverage with a probability value of 0.0147 less than the critical value of 0.05, while the coefficient of variation and t-statistic revealed a significant statistic 0.121529 and 2.450427 respectively. It was also revealed that there is a positive and significant relationship between intellectual capital disclosure and company age as defined by the date or year that the company was listed with a probability value of 0.0000 less than the critical value of 0.05, while the coefficient of variation and t-statistic revealed insignificant statistic 0.035573 and 8.314596 respectively. Consequently, the recommendations were given; Investors in Nigeria Stock Market should make their investment in shares by watching the level of human capital information disclosed by the companies, Companies were also advised to disclose employee related information.*

**Keywords;** *Intellectual Capital Disclosure, Determinant, Profitability*

## Background of the Study

At the beginning of the 21st century, the role of intangibles as value and growth creators became accepted among economists, investors and managers (Pandya & Jain, 2015). This is because advanced economies are moving towards a knowledge-based economy in which companies' competitiveness and sustainability are increasingly dependent on knowledge based resources. Since then, there have been clarion calls for the recognition of new resources, intangibles, such as knowledge workers, entrepreneurial spirit, work-related knowledge, networking, corporate culture and business strategies, which have not been previously included in corporate financial statements (Rashid, Ibrahim, Othman & See, 2012). However, in the present business environment, companies endeavour to create a competitive edge over their competitors through their investment in intangible assets (Irandegani & Bameri, 2014). It has been stressed by researchers that non-disclosure of intangible assets will create information asymmetry. Intangibles like technological know-how, intellectual capital, knowledge relationships, trademarks, brands, patents, corporate cultures, research and development expenditures, worldwide networks, global customer base, satisfied customers, internet and e-commerce, organizational structures, skilled employees etc which are becoming basic drivers for achieving competitive strength need to be disclosed.

However, intellectual asset disclosure continues to receive increasing attention among companies around the world including Nigerian companies (Garcia-Meca & Martinez, 2005). Nigeria issued its first accounting standards on intangible assets in June, 2006. Before then, Nigeria did not have accounting standard on intangible assets and did not adopt the International Accounting Standard (IAS) 38, the release of the then Statement of Accounting Standard (SAS) number twenty-two (22) by Nigerian Accounting Standard Board (NASB) in June, 2006 marks the beginning of standardization on reporting of intangible assets by companies in Nigeria (Salman & Dandago, 2013). Given the inadequate accounting processes for measuring and reporting these intangibles, corporate managers have recently begun to voluntarily disclose information relating to them and how they contribute to the firms' creation of value. This inability of the existing financial reporting practices to account for all types of intangible assets in the financial statements of companies prompts the need for companies to take more serious actions to improve the disclosure of intangibles-related information to further enhance the knowledge and understanding of the users of accounts on the importance of intangibles (Cañibano, García-Ayuso, & Sanchez, 2000). This is evidenced from the various forms of disclosures made by companies to disseminate more relevant information. More companies are taking additional initiatives to disclose information on a voluntary basis to demonstrate the usefulness of intangible assets in generating future benefits.

A progressively developing country like Nigeria has to effectively move away from production of labour-intensive goods to a knowledge-driven economy that focuses more on utilizing intangible assets, human knowledge and skills, rather than on production of labour-intensive goods (Taliyany, Latiff & Mustafa, 2011). Also, Lee (2010) stated that the growth of the service sector

and information technology related businesses alongside with the dramatic increase in the number and size of mergers and acquisitions have made accounting for intangible assets very important. Given the increasing significance of intellectual capital in driving corporate value, it can be however argued that corporations should nonetheless communicate the relevant and useful information on intellectual capital to their stakeholders through disclosure. Also, Dutz, Kannebley, Scarpelli and Sharma, (2012) are of the opinion that there is an overwhelming importance attached to intellectual capital and any attempt to ignore any intangibles in the financial reporting will lead to distortion and incomplete performance measurement.

### **Statement of the Research Problem**

Several previous researches have been conducted to discuss the significance of firm characteristics in the economic environment which have the potential to alter the nature of financial reporting and disclosures. They provide some empirical evidence to the company specific factors that might explain the type and amount of information disclosed about intellectual capital. A careful examination of the extant literature in the area of firm characteristics and intellectual capital disclosure reveals certain gaps that provide the reason why this study should be undertaken. Al-Hamadeen and Suwaiden (2014) reveal that ownership concentration and firm size have a positive influence on the disclosure of intellectual capital while the independent variables such as leverage and firm age have no significant effect on the disclosure of intellectual capital. In the research conducted by Whiting and Woodcock (2011), industry type has significant effect on intellectual capital disclosure but ownership concentration, listing status, leverage and firm age have no significant effect on the intellectual capital disclosure. While in the research of Oliveira, Rodrigues and Craig (2006), size, industry type, type of auditor, ownership concentration and listing status have positive effect on intangible assets disclosure, while profitability and leverage are not significant. Kang and Gray (2011) provided evidence of the association between Generally Accepted Accounting Standards (national GAAP), industry type, price-to-book ratio, economic risk, legal system risks and intangible assets disclosure. Ousama, Fatima and Hafiz-Majdi (2012) found positive effect of size, profitability, type of industry on intellectual capital disclosure in Malaysia. Ferreira, Branco and Moreira (2012) provided evidence of the positive relation between size, type of auditor and intangible assets disclosure while there was negative relationship between ownership concentration leverage, profitability, type of industry and intellectual capital disclosure and several other researchers.

From these researches, there are inconsistencies and mixed results from the findings. Several explanations have been put forward for these apparent inconsistencies in these studies. Oliveira et al (2006) argued that the problem lies with the use of either publicly available data or survey data as these sources are generally restricted in scope and the different periods analyzed While Kang & Gray (2011) analyzed the problem to be national differences or the difference in national accounting system and others Kamath (2008), White, Lee, Yuningsih, Nielsen & Bukh (2010), however, focused on either only service and communication sectors or financial sector alone. It was also been pointed out that the nature of the disclosure measures used and the use of different methods could be responsible for these inconsistencies. The aforementioned have created gaps in knowledge that this study aimed to bridge and to do this we used a hybrid sample, a combination of different firms from diverse sectors, that is, from both financial and non-financial institutions. The application of uncommon methodological approach is the justification for study. Therefore, the study contributes to resolving the inconsistency.

### **Research Questions**

- (1) What is the relationship between firms' profitability and intellectual capital disclosure in Nigeria?
- (2) What is the relationship between firms' size and intellectual capital disclosure in Nigeria?
- (3) What is the relationship between firms' financial leverage and intellectual capital disclosure in Nigeria?
- (4) What is the relationship between industry type and intellectual capital disclosure in Nigeria?
- (5) What is the relationship between company age and intellectual capital disclosure in Nigeria?

### **Objectives of the Study**

The broad objective of this study is to examine the determinants of intellectual capital disclosure in Nigeria. The specific objectives of this study are to:

- (1) examine the relationship between firms' profitability and intellectual capital disclosure in Nigeria;
- (2) ascertain the relationship between firms' size and intellectual capital disclosure in Nigeria;
- (3) determine the relationship between firms' financial leverage and intellectual capital disclosure in Nigeria;
- (4) evaluate the relationship between industry type and intellectual capital disclosure in Nigeria.
- (5) evaluate the relationship between company age and the level intellectual capital disclosure in Nigeria

## Research Hypotheses

The aim of this study is to find out the determinants of intellectual capital disclosure in Nigeria; against this backdrop, the following hypotheses which are stated in the null form are raised.

**H<sub>1</sub>:** There is no significant relationship between firms' profitability and intellectual capital disclosure in Nigeria.

**H<sub>2</sub>:** There is no significant relationship between firms' size and intellectual capital disclosure in Nigeria.

**H<sub>3</sub>:** There is no significant relationship between firms' financial leverage and intellectual capital disclosure in Nigeria.

**H<sub>4</sub>:** There is no significant relationship between industry type and intellectual capital disclosure in Nigeria.

**H<sub>5</sub>:** there is no significant relationship between intellectual capital disclosure and company age in Nigeria.

## Scope of the Study

The study focuses on five years period of 2010-2015 of firms listed in the Nigerian Stock Exchange Market. It seeks to provide evidence about the determinants of intellectual capital disclosure by firms in the Nigerian Stock Market. The study will investigate the relationships between firms' profitability (PROF), company size (CSIZ), financial leverage (LEV), company age (COMA) and industry type (INDTY) and the intellectual capital disclosure (HCD) of the firms. To achieve the objectives of this study, a total of sixty five (65) firms listed on the Nigerian Stock Exchange Market are used for analysis. The choice is based on the need for a cross-sectional consideration of intellectual capital determinants and to have elaborate information of the intellectual capital aspect disclosure pattern of the firm.

## Significance of the Study

This study is significant in several ways. Understanding the influence of firm characteristics on intellectual capital can help in reducing the disclosure gap that exists due to inconsistent flow of information. This voluntary disclosure framework can assist preparers of accounts in highlighting some areas of disclosures that still need to be improved so that details on the treatment of intangible assets can be made available. This study also theoretically assists in enhancing knowledge and appreciating the growing importance of intellectual capital as a main value creator and the appropriate disclosure within annual reports. It contributes to theoretical understanding of intangible assets reporting in the financial statement. It is also important to notice that some small audit firms, professional consulting companies, and other accounting and business associations are also facing the dilemma of having insufficient knowledge to tackle the issue of recognition, measurement and appropriate disclosure of intellectual capital in the books of their clients. With continuous exposures and proper knowledge dissemination through voluntary disclosures of intangible assets, such complexity could be overcome in due course. The study made contributions to the methodology of the existing studies on firm characteristics and intangible assets disclosure by employing a model to test the effect of firm characteristics on intangible assets disclosure in Nigeria. This study contributes to existing literature on firm intellectual capital disclosure in two ways; first, it provides evidence on how firm characteristics influence intangible assets disclosure in developing countries like Nigeria, secondly, it offers some insights into how firm characteristics influence intellectual capital disclosure in Nigeria. The study can also provide a good reference source for researchers interested in the same areas of study, especially on similar issues.

## LITERATURE REVIEW

### Intellectual Capital Disclosure

In the past two decades, intellectual capital disclosure has increased tremendously and many studies have been carried out. Specifically, studies have been done on intellectual capital disclosure in the developed countries, but limited studies have been conducted in the developing countries (Adebawojo, Enyi & Adebawo, 2015; Al Mamun, 2009; Micah, Ofurum, & Ihendinihu, 2012). Extant literatures provided evidence on the awareness and importance of human capital disclosure on the sustainability and performance of a reporting entity (Salman & Dandago, 2013). Sveiby (1997) made the concept clearer when he opined that human capital, intellectual capital and structural capital concepts are similar to other assets and as such should be accorded the same recognition. His argument is that companies procure intellectual capital to generate future income, and therefore intellectual capital should be capitalized in the company financial statement rather than expensing them in the current period. Intellectual capital to a great extent should be seen as an integral part of the company's value – creating processes (Holland, 2003; Bukh et al, 2005, Organisation of Economic Corporation and Development OECD, 2006) as well as creating and maintaining competitive advantage

(Holland, 2006). In the business environment today as a result of the increasing level of knowledge and technological advancement, there is therefore a huge investment by firms in intellectual capital assets providing grounds for its recognition.

There is no generally acceptable definition of Intellectual Capital (IC). Different studies have adopted different definitions that suit the context of their interest (Micah, Ofurum, & Ihendinihu, 2012). For instance, Verguwen and Alam (2005) defined IC as the core value of all the employees in the company and the rewards (wages and salaries, benefits, allowances etc.) that are attached to their utilization. Roos and Roos (1997) opined that IC includes the skills, knowledge, experience, ability, competence and capability that employees take with them when they leave the organization. Al-Maani and Jeradat (2010), view it as what people owned from learning, experience and skill, and what is delineated as human capability that is directly linked to work effort. Many at times, organizations invest huge capital in the human capital that is not the sole property of the company but owned by the employees (Roos, Roos, Dragonetti & Edvinsson, 1998). However the intellectual capital is a source of wealth for organizations (Bontis, 1999). In another vein, Mahamad and Salman (2011) see human capital as learning, training, experience, knowledge, capabilities, capacities, creativity, and core competence of human resources present in an organization. From the above definitions, we can conclude that intellectual capital relates to all human efforts tangible and intangible, within the organization that create values and are rewarded for the values created.

According to Collings (2011), IAS 38 prohibits the group of intangibles known as internally generated from being recognized in the statement of financial position. He further stated that customer list, brands, mastheads and publishing titles are examples of intangibles that should not be recognized in the financial statements. From the information above, it can be argued that the accounting information systems are not all inclusive of corporate intangible assets and their economic impact. This causes abnormally high volatility of stock prices that resulted to undue losses to investors and misallocation of resources in capital markets. Bearing in mind that the accounting model of financial reporting was not able to provide relevant information about the company's assets, there have been concerted efforts to overcome these limitations. This leaves an information gap that is not satisfying to stakeholders, hence, there is a need for assessing the intangible assets disclosure of the corporate organization (Whiting & Woodcock, 2011).

Voluntary disclosure of intellectual assets is a complex function of several factors both company factors and external factors. It can be influenced by various cultural, economic, political and corporate factors. Oliveira, Rodrigues and Craig (2006) revealed that the extent of disclosure of intangible assets varies from company to company due to the influence of different firm-specific characteristics. These firm characteristics studied are size of the firm, its profitability, leverage, ownership concentration, listing category, audit-firm size, nature of industry, foreign activity etc. They further divided these explanatory variables into three groups as follows: Structural variables including firm size, leverage, audit firm size and ownership concentration; Performance variable which includes profitability; Market variables comprising industry-type, listing status and foreign activity.

In a qualitative survey study in the Malaysian stock market, Ousama, Fatima and Hafiz Majdi (2011) with the aid of a questionnaire to solicit information from the preparers of their perceptions or views (i.e. CFOs and accountants) and external users (i.e. analysts and lenders) regarding usefulness of intellectual capital information disclosed in annual reports by the listed companies. The results showed that preparers and external users perceived intellectual capital information useful for decision making. The study also reported that the perception of usefulness between preparers and users are significantly different. Given the fact that usefulness of IC disclosure was evidenced by perceptions expressed by users as well as preparers, the study recommended that effort should be directed towards ensuring adequate attention is channeled towards enhancing disclosure practices by listed companies.

Rimmel's (2003) study is concerned with the relationship between information, providers and users of intellectual resources disclosure in advanced annual reporting practices for two Swedish companies. The results indicate that when it comes to specific information like disclosures about intellectual resources, a gap is found between users' disclosure demands and the companies' supply of information. Information users suggest that more detailed voluntary disclosure would be beneficial and that a more structured and standardised non-financial disclosure is preferred because it increases transparency and comparability of corporate social reporting.

### **Measurements of Intellectual Capital**

Most studies on intellectual capital disclosure (ICD) used different methods have been used in literature to capture ICD (Boutis, 2001; De beer and Barnes, 2003). Numerous list of financial and non-financial intellectual capital index commonly used model includes:

- a. Tobin's q Skandia navigator
- b. Intangible asset monitor
- c. Calculated intangible value and
- d. Human capital efficiency

These measures have their separate shortcomings and no measure of intellectual capital is yet to be confirmed to be superior to the other. However, Sullivan (2002) opined that the application of indicators to individual component of IC such as structure, rational and human capital, would reduce some of the shortcomings by measuring ICD in whole.

Studies have also identified a number of indices or indicator for measuring human capital, pantalis and Park (2009) used Excess Value of Human Capital (EVHC), which is the ratio of the natural logarithm of the market value of equity per employee to

the natural logarithm of the industry median market value of equity per employee. The understanding of what constitutes an employee in each company is important to the accurate determination of the EVHC indicator. Pantzahs and Park (2009) opined that EVHC is not actually the measure of human capital but rather a measure of the market value of the firm or a measure of the business risk related to undue reliance on human capital and the inability of the firm to assign value to human capital.

Lajili and Zeghal as cited in Carla (2014) propounded the Human Capital Training Value (VT), which is a measure of the firm's return on investment in training its human capital. It is determined as the difference between the marginal product of labour and average labour cost per employee. The marginal product of labour is a measure of the incremental productivity of each additional employee added to the workforce. Deriving the value of VT incorporate, complicated calculations of the direct cost of employees training costs. This method is also faced with the challenge that most trainees are given at the point of appointment and there may not be a constant ongoing on the job training of employee.

Bontis and Fitz-enz (2002) formulated four human capital structures, in measuring effectiveness, valuation, investment and depletion, using empirical data, they averred, that the human capital effectiveness comprises of the metrics of revenue, expenses, income and return on investment. Valuation includes metrics for compensation revenue, compensation expenses, compensation executive, compensation and supervisor compensation. The human capital investment measure includes, development rates, training rate and training cost. Depletion construct include voluntary turnover, involuntary turnover and total separation rate. The cost of collecting this data from the selected company is high; therefore this method is also limited.

Pulic (2000) suggested that intellectual capital can be measured using the efficiency with which value is added to it. The study identifies the component of the Value Added Intellectual Coefficient (VAIC) according to the capital employed (Tangible Assets), structure capital and human capital. Pulic (2000) measured the human capital efficiency, that is, value added human capital (VAHY), as value added divided by total payroll costs. According to him, the calculated value is best described as true value added per unit of input cost relating to HC.

### **Determinants of Human Capital Disclosure**

This section discusses some of the determinants of human capital disclosure using firm specific factors, as shown below

#### **Profitability**

Performance could be regarded as one of the key determining factors that are widely used in measuring the success or failure of organisations. Although several research works have been carried out on performance related issues as they affect organisations or firms but their definition has been challenging to researchers. According to Roger and Wright (1998), performance is probably the most widely used dependent variable in organizational research today, yet it remains one of the most vague and loosely defined constructs. They further confirmed that the struggle to establish a meaning for performance has been ongoing for many years and it is not limited to the field of strategic corporate management.

Sharma (2012) opined that, organization's performance is a function of the quality of intellectual capital at its disposal, the success of any organization depends on the quality of its intellectual resources whether it belongs to manufacturing, service or a retail outlet. The study also emphasized the fact that organizations' intellectual resources are important assets that are used to increase productivity, earning capacity, increasing wealth and profit, market value and economic value added. Although, the physical assets could be important, they are to complement human assets when it comes to issues of performance because physical assets can neither think nor decide. It is the intellectual capital aspect of the organization that is responsible for coordinating all other resources available to the organization, by effectively making proper use of the physical resources to channel the course of organization.

This is the accounting method of measurement that uses historical data and critics view this as past records hence not valid enough for present decision making. These critics argue that the market approach is better and more reliable since it uses current valuation methods. Accounting methods consists of profitability and liquidity ratios. Profitability ratios involve measuring profit against sales and profit against investment. There is no gainsaying the fact that the continued viability of a company depends on its ability to earn adequate returns on investment. Some ratios that can best measure such returns include Return on Assets (ROA), which takes more cognizance of how the resources of the organization were made use of and therefore more explanatory.

The ROA is the intended measure of financial performance in this research work. Finally, Return on Equity (ROE), and Return on Capital Employed (ROCE) which demonstrated the returns on the equity capital of the firm after outsider interest etc debt holders have been settled. Micha, Ofurun and Ihendinihu (2012) found an inverse relationship between the performance index (ROA) of a firm and the degree of human capital accounting disclosure. This findings support the need to regard certain human resource's cost as investment to be capitalised and reported in the statement of financial position rather than expenditure to be reported as expense in statement of comprehensive income.

#### **Firm Size**

It is generally accepted that larger companies have greater tendency, and greater social obligation, the agency and political cost theory have made it easy for most researches to consider the size of the company as the major variable in most disclosure literatures. Most studies on disclosure whether mandatory or voluntary, have found a positive significant relationship between the company size of the level of disclosure, both the developing and developed countries. Literatures have identified several reasons why there is a significant relationship between company sizes at the level of corporate social disclosure. First, the cost of generating and accumulating information to disclose is higher for smaller firms than larger firms. This is due to the fact that bigger companies possess the financial resources to bear such additional cost of disclosing social information in the annual reports. Secondly, the

agency cost is higher for large firms because shareholders are widespread and the only way is disclosing more information to reduce the potential agency cost.

### **Financial Leverage**

Studies have explored the relationship between disclosure levels and firm leverage. Firms with high leverage are generally expected to disclose more information to satisfy creditors (Alsaeed, 2006). Most studies have used the agency theory to explain the incentive for managers of high leverage firms to provide more detailed financial information (Morris, 1987). Alsaeed (2006) argues that firms with proportional higher levels of debt in their capital structure incurred more agency costs. Therefore, managers have an incentive to reduce these agency costs. One major way to reduce agency cost is to disclose more accounting information to satisfy the needs of debenture holders (Morris, 1987). In addition, by disclosing more information, highly levered firms can enhance their creditability and that they are less likely to bypass their agreed claims (Ali, Ahmed and Henry, 2004). Similarly, Wallace et al. (1994) argue that high-leverage firms have a greater obligation to satisfy the information needs of their long-term creditors or debt holders and, thus, may provide more detailed information in their annual reports than low-leverage firms. A positive significant relationship exists between Human Capital Information and the extent debt financing (Camfferman & Cooke, 2002; Watson et al, 2002, Prencepe, 2004 and macagnan, 2007).

### **Industry Type**

The particular economic sector which the company operates may impact management interest towards information disclosure in the company's annual report. Studies have confirmed that there is an association between disclosure level and specific industry sector (Raffournier, 1995). Furthermore, other studies have reported no differences in disclosure level between industries (Watson et al, 2002). In any case, the evidence provided in literatures are indifferent and unreliable, we believe it is right to assume there is no connection when testing whether disclosure varies between industries.

### **Company Age**

Age of the company has been specifically identified in studies as a character attributes having an impact on the quality of accounting practice. However, in other studies, company age has been often represented as a proxy for risk. Therefore, the extent of firm's voluntary disclosure can be related to how many years it has been in operation but the older the firm the more likely they are to have strong internal control procedures resulting to a clearer and high quality information disclosure (Damodaran, 2009).

Haniffa and Cooke (2002) utilized listing age in their study. Listing age has not been often tested at all in earlier studies, and therefore, there is not much empirical evidence relating to this variable. This approach has been adopted in this study as well. Listing age is the length of time a company has been listed on a capital market, and it may be relevant in explaining the voluntary disclosure level (Haniffa & Cooke, 2002)

### **Theoretical Framework**

This study is based on the human capital theory; this theory was adopted because rooted on the economic principle of labour and the right for proper rewards and recognition. The study also discussed the stewardship and stakeholder's theories so as to provide a rich theoretical background for the study and validates the empiricism of the current study. According to the proprietary costs theory, the higher the level of company information disclosure is, the higher the costs become (Wagenhofer, 1990). Three types of costs are considered: (1) the cost of preparing and communicating information ( Elliot & Jacobson, 1994); (2) costs related to evaluating earnings per share estimates (Verrecchia, 1990) and (3) the cost of competitive advantage loss due to reactions from competitors drawn from the disclosure of company information (Wagenhofer, 1990).

### **Human Capital Theory**

This theory is adopted from the study of Adbawo, Adebowojo and Enyi (2015), this study was based on the Human Capital theory proposed by Schultz (1961) and extensively developed by Becker (1964). The theory has its root from labour economics which is a branch of economics that focuses on general work force in quantitative term. According to the theory, Human capital theory contends that education or training raises the productivity of workers by imparting useful knowledge and skills, thus raising workers' future income through increase in their lifetime earnings. The theory postulates that expenditure on education or training and development is costly, and should be considered as investment since it is undertaken with a view to increasing personal incomes. Human capital approach is used to explain or support occupational wage differential. However, the position of this study is that education or training and development will not only increase employee personal income, it will also serve as a means of achieving corporate competitive advantage which reflects ultimately in organisational performance.

According to Flamholtz and Lacey (1981), as noted by Baney and Wright (1997), human capital theory distinguished between general skills and firms' specific skills of human resources. General skills are skills possessed by individuals which provide value to a firm and are transferable across a variety of firms. For instance, all competitor firms have the potential to accrue equal value by acquiring employees with knowledge of general management, the ability to apply financial ratios, or general cognitive

ability. On the other hand, specific skills provide value only to a particular firm, and such skills are of no value to competing firms. An instance of this is the knowledge of how to use a particular technology used only by one firm, or knowledge of a firm's policies and procedures provided to that firm, but usually would not be valuable to other firms.

In Becker's view, Human Capital is similar to "Physical means of production" like factories and machines. One can invest in human capital through education, training and even medical treatment while one's output depends partly on the rate of return on the human capital one owns. Thus, human capital is a means of production into which additional investment yields additional output. Human capital is substitutable, but not transferable like land, labour or fixed capital. The relevance of the theory to this study is that it considered the cost of education, training, development and even workers' medical treatment as investments towards improved productivity of individual workers and also creates a sort of competitive advantage which ultimately could result in improved organizations performance. Thus, if these are investments like other physical assets which are reflected on the balance sheet, considerable effort must be made to also reflect such value of Human Capital on the balance sheet.

### **Stewardship theory**

Stewardship theory postulates that agents are stewards who manage the firm responsibly to enhance firm performance (Muth & Donaldson 1998). Agents as stewards are motivated to act in the best interests of the principals (Donaldson & Davis 1991). It is further argued that the model of a human being is based on a steward whose behaviour is pro-organizational and collectivistic. In the agency theory, these behaviours are believed to have higher utility than individualistic and self-serving behaviours (Donaldson & Davis 1991). Stewardship theory argues that the stewards put the value of the firm higher than their individual interests. The behaviour of stewards is assumed to be collective since their goal is mainly the success of organizations reflected through, for example, a high profitability and sales growth, which leads to the satisfactions of principals due to an enhanced wealth (Davis, Schoorman & Donaldson 1997).

Furthermore, according to Muth and Donaldson (1998) the stewardship theory indicates that higher level management also has non-financial motives that include the demand for achievement and recognition, the intrinsic satisfaction of successful performance, respect for authority and the work ethic. Additionally, when the boards are insiders (those who were previously the managers or the employees of the firms) they are empowered to behave as stewards and to manage companies' assets accountably. Furthermore, Muth and Donaldson (1998) state that when the boards and managers work together and acknowledge the obligation to enhance a firm's performance in the future, this develops trust and empowerment, the depth of experience, technical expertise, and ease of communication required for effective board functioning. The importance of the topic justifies empirical examination. For the purpose of this study emphasis shall be on stewardship theory.

### **Empirical Review**

This section is dedicated to the review of extant literature on the determinants of intellectual capital disclosure.

Goh (2005) studied intellectual capital performance of commercial banks in Malaysia using a sample of all listed Banks for the period of three (3) years; the study adopted efficiency coefficient refers to as Value Added Intellectual Coefficient (VAIC). The results showed that the sampled Banks had greater human capital efficiency than structural and capital employed efficiencies. Moreover, domestic banks were found to be less efficient compared to foreign banks, the results also confirmed a high rate of human capital disclosure and the banks score a high mark of significant relating the average disclosure rate to firm profitability. This finding was consistent with the findings of Mohiuddin, Najibullah, and Shahid(2006), they study HCD in Bangladesh for the period of four years using also the sample of list Banks, the found that there is a significant relationship between HCD and the Banks performance.

Tan Plowman and Hancock (2007) employed the VAIC model to determine a positive relationship between ICD as corporate performance, using 180 listed companies quoted in the Singapore exchange market for the period of three (3) years between 2000 and 2002. The study used the measure of EPS, ROE and annual return. The finding shows that the present and future performance of the firm can explain the level of ICD rate of growth. But the study found the relationship between EPS and ICD not significant as they exported. Solotti and Yamamoto (2008) tested the floating capital hypothesis, when ownership of stock is diffused is split, that is the shareholders do not have effective management control. It can be said that if the percentage of floating capital is high, the company's shares are scattered or dispersed throughout the market are held by different investors. Company with more floating capital human capital information disclosure could reduce the problem related to information asymmetry and agency cost (Macagnan, 2007).

Salman and Dandago (2013) investigated intellectual capital disclosure in financial reports of Nigerian companies, the study used a sample size of 50 companies listed in the Nigerian Stock Exchange Market, the study also employed content analysis method and 17 indexes were employed to show the extent of disclosure. The results show that Nigerian companies commonly expressed in narrative and qualitative rather than in quantitative or monetary terms of intellectual capital disclosed. The result further showed that, companies in Nigeria chose rather any style favourable to disclose information relating to IC, and more than half of the companies sampled have been disclosing information on 7 items to 16 items out of 17 items. The study concluded that the level of disclosure is an indication that there is a clear understanding and awareness of the importance of human capital disclosure. Even though the study found that the overall disclosure quality score is low, it can said that companies have at least a modest tendency and commitment in reporting their human capital information to their stakeholders in the annual reports.

Vuontisjarvi (2006) explores the extent to which large Finnish companies have adopted socially responsible reporting practices with a focus on human resource reporting within corporate annual reports. The results revealed that human resource

disclosures lack overall consistency and comparability. Quantitative indicators are disclosed by few companies in the sample, with further concern evident with a lack of attention paid to disclosures relating to equal opportunities, work life balance and integration of disadvantaged groups.

Khan (2011), in an article on intellectual capital disclosure practice of top Bangladesh companies, the study analyzed the disclosure practice of the sampled companies. The main objective of the paper is to investigate the level of ICD around top leading companies, in the context of developing countries. The study used content analysis method with a sample of 52 companies and for the period of 3 years. The data were collected from the top manufacturing companies and service companies listed on the Dhaka stock exchange, the method of selection was on the basis of the market capitalization, he also examined trend of ICD. The findings show that ICD was not as low as reported. The study as confirmed that most of the companies disclose information of human capital in the area of employee training, number of employees, career development and opportunities that firms provide and employee recruiting policies.

Vafaei, Taylor and Ahmed (2011), also attempted to unmask the IC disclosure practices in listed companies. The study used listed companies in Britain, Australia, Hong Kong and Singapore, as samples, and employed content analysis to examine context in their annual reports. The study aimed at exploring the extent of human capital related information disclosure as contained in companies' annual reports and the extent the information disclosed contributed to the core value-relevance of earnings and equity of corporations. The result show that human capital information is significantly related to the market price of the companies, that is ICD is value relevant in companies in two of the four countries and in non-traditional sectors.

In Nigeria, Adebawojo et al., (2015), they studied Human asset accounting and corporate performance. The study which aid to investigated the likely effect of human asset accounting on the performance of business in Nigeria. The study adopted an empirical Ex-post facto research design, on a sample of 18 listed Banks in Nigeria capital market. The studied employed primary data with the aid of a well-constructed questionnaire designed to collect relevant information from the respondents on a six steps Likert Scale and validated through peer review with Cronbach Alpha Coefficient of 0.807 and 0.870 for Human Asset and Organization Performance respectively. The hypothesis was tested using simple regression model. The result of the analyses confirmed that human asset accounting significantly affects the banks performance and also human capital related information is relevant to the market value of the sampled Banks in Nigeria. Though the study employed the instrument of a questionnaire (primary data) and the outcome may be subject to some error due to the erratic human nature, this study will improve on this findings by the use of secondary data and we expect the same outcome that the market value of listed companies will substantially increase with the disclosure of human capital related information in the annual reports of companies operating in Nigeria.

Cormier, Aerts and Magnan (2008) studied the attributes of social and human capital disclosure. The study posits that disclosure strategy will affect simultaneously market value and disclosure decision of the firm. The sample of 155 non-financial companies quoted in the Toronto Stock Exchange was employed, the result showed that quantitative disclosure reduces share price volatility for social capital disclosure as well as human capital disclosure, the result also suggest that efficient good governance will lead to more transparency in quantitative human capital disclosure while the extent of Chief Executive Officer (CEO) stock options will lead to less transparency in social capital disclosure.

Monteiro and Aibar-Gusman (2009) studied the determinants of human capital disclosure. The study focused on the human resource disclosure as made in the annual report by a sample of 109 large firms for the period of three (3) years, the result showed that companies listed in the stock market are positively associated with the level of disclosure, the study concluded market value of the firm increases as the level of human capital disclosure increases. Finr and Stainbank (2003) examined the relationship between intellectual capital performance, the study aim to analyze the influence of profitability, productivity on intellectual capital disclosure using a sample of 65 companies of knowledge based industries in 2001 financial year, the study used the sample of sub-sector of business service, pharmaceutical communication, electronic, finance, insurance, real estate and health services. Intellectual capital was on found to have a significant association with profitability and no evidence was found between share price and intellectual capital disclosure.

Li, Pike and Haniffa (2007) is a study of human capital disclosure, its impact on market performance with a strong corporate governance structure, the study which assessed the future performance of the firm and its ability to create wealth with the level of intellectual capital and its disposal, the study aim to measure the response of the market to human capital disclosure of the firms. The findings showed that voluntary disclosure can lead to precise valuations of the firms stock, and promote liquidity on the stock market.

Syed (2009) studied the determinant of HCB and firm characteristics using fifty five randomly selected companies and HCD index. A number of hypothesis were tested, the result showed that on the average companies disclosed 25% information on HC, furthermore, the study revealed that a significantly positive relationship exist between firm size, profitability and HCD but no relationship was found between company age and HCD.

Latif, Malik and Aslam(2012) carried out an investigation of the relation between intellectual capital, (physical capital, Human capital and structural capital), efficiency of their value added and the dimensions of corporate performance: profitability, productivity, and market valuation of Islamic banks of Pakistan. The study used the annual financial reports of the Banks for the period of five years. They found mixed correlation between physical capital, Human capital and structural capital and profitability, productivity and market valuation. The results showed that from the values of betas and R2 that human capital efficiency is the main



predictor of corporate performance of Islamic banks, while the capital employed efficiency is the main predictor of corporate performance conventional banks.

Khan and Ali (2010) conducted another study in Bangladesh, in human capital reporting in private commercial Banks. The study also administered questionnaire to know the perception of stakeholders of their views concerning human capital disclosure in the annual report of the private commercial Banks. They found that the sampled banks lack the motives to voluntarily disclose human capital activity, the results also show that the key focus for IC disclosure was on human capital elements and there was a significant relationship between HCD and bank performance.

Fernando and Macagnan (2002) studied the factors explaining the level of voluntary human capital disclosure in the Brazilian capital market. The study explored 145 annual reports of 29 companies listed in the Brazilian stock market for the period of five (5) years, 2005-2009. The study which test eight hypothesis aim at investigating the factors that determines voluntary information disclosure by using content analysis of the indicators of human capital disclosure. The results indicated that the factors of size, debt of company registered to the stock market explained the level of voluntary human capital disclosure.

Subbarao and Zeghal (1997) analysed the annual reports of a sample of quoted corporation in the developed countries, the UK, Canada, USA, Germany, Japan and South Korea. The study main objective was to find out the level of human capital information disclosure in these countries the study explored the annual reports of the financial and manufacturing sectors of these different countries. A sample of 120 annual reports comprising of 20 reports from each company listed were analyzed. They found that the size of the reporting entity and the level of debt employed determine the level of human capital information disclosure. This is similar to the findings of (Brennan, 2000 and Bontis, 2003).

Kang and Gray (2011) revealed that a negative relationship exists between financial leverage and the level of voluntary HCD in a study 200 top emerging market companies. In the same vain, Zourarakis (2009) found no association between leverage and the level of HCD. Ding and Stolowy (2002) stated that leverage is not a determinant of voluntary human capital disclosure.

In Nigeria, Haji and Mubaraq (2012) examined the trends of intellectual capital disclosures in the Nigerian banking sector over a period of four year. They found an overall moderate increase in IC disclosures. The results showed dominance of human and internal capital disclosures, however only internal capital disclosure showed significance in increase and significantly affect performance.

Enofe, Mgbame and Ovie (2013), studied human resource accounting disclosure in Nigeria listed firm, the study was carried out to verify the relation between firms' profitability and human resources accounting disclosures, they used data from financial and non-financial sectors with a sample of 50 companies quoted in the Nigerian Stock exchange, the companies used were randomly selected. The data collected were analysed using the multiple regression statistical tool to test the relationship between the variables. The result showed that a positive relationship exists between the financial performance of a company and its level of Human Resource Accounting Disclosure. The study also indicates that financial companies are disclosing human resources accounting information more than non-financial companies and that company's profitability positively influences companies to report the human resources accounting information in their Annual report.

Williams (2001) forecasted a positive relationship between firm performance and human capital disclosure. Contrary to the prediction, the result showed significant negative relationship between the level of a firm's intellectual capital disclosure and the firm's profitability. Based on the results of their study they concluded as a firm level of performance increases, the level of disclosure reduces to enable the firm to conceal from time to time from competitors strategically significant information in an effort to maintain its competitive advantage. Syed (2009) investigated corporate characteristics and HRA disclosure. The study revealed that companies with higher profit have more incentives to disclose more HRA information.

Al Mamun (2009), in a study of human capital determinants affirmed that quoted companies in Bangladeshi, that there is relationship between Human Capital Information and company size. He further stated that, the result of the study shows that company size significantly associated with Human capital information disclosure, which led to the conclusion that larger companies with higher market value disclose more human capital information than the smaller companies. What necessitate this outcome could be that large companies have incentives to disclose more human resources information in their annual report to uphold market value. The study noted also that financial companies are disclosing more human capital information than nonfinancial companies and that company's profitability positively influences companies decision disclosure both financial and nonfinancial information in the annual reports.

Bruggen, Vergauwen and Dao (2009) investigated the determinants of human capital related information disclosure in the annual reports of Australian companies, the study used the sampled of 125 publicly listed firms. The results show that company size is an important determinant of the disclosure level of HC information. Studies have argued that this result is important and is a signal to investors, which indicates the relevance of HC for some firms and industries. Nurunnabi and Hossian (2011) study Intellectual Capital Reporting practices in Bangladesh using a sample of 90 listed non-financial companies. Using a weighted average disclosure index and ordinary least squares regression tools to test the relationship between company specific characteristics and the level of ICR. The findings indicated that there exists a likelihood of the companies not to disclose IC, even though the market value of the firms increased substantially during the period. Furthermore, the study confirmed that size and industry are important characteristics associated with IC disclosure in Bangladesh.

In another study by Sengupta (1998), the study investigated corporate disclosure quality and the cost of debt. The study suggests that, there is a lower cost of issuing debt when the quality of the firm voluntary disclosure is high. This is also supported by (Healy and Palepu 1993) who documented that a negative association between the cost of equity capital and voluntary disclosure level of the firm. Prior research provides conflicting findings regarding the association between leverage and the level of disclosure. For example, Belkaoui and Kahl (1978) and Al shammari (2007), identified leverage as a factor positively associated with level of disclosure. In contrast, Ahmed and Nicholls (1994); Wallace et al (1994); Ali, Ahmed and Henry (2004) and Hassan, Giogioniand Romilly (2006) provide no evidence of such an association. In this study, our measurement of financial leverage is debt-equity ratio. And also other previous studies proved no significant association between leverage and the level of voluntary disclosure (Wallace et al., 1994; Inchausti, 1997; Alsaeed, 2006; Huafang and Jianguo, 2007; Chau and Gray, 2010), while some found a positive significant association (Malone et al., 1993; Hossain et al., 1995). But, Eng and Mak (2003) found a negative significant association.

David and Kochhar (1996) and Kim and Lee (2003) state that if an individual has a substantial amount of interest in a particular company (usually measured at 5%), he or she will be more interested in the company and hence the holders is an important player to have higher disclosure since they have the voting power that could be used as a tool to monitor the agents or management in charge of the organization operations. From the agency theory, it could be inferred that shareholders have the interests in the firms; most likely they might put the pressure on the management to disclose all the material information. Therefore, it could be expected that there is a positive relationship between shareholdings and human capital disclosurr. Luo, Courtenay and Hossain (2006), Huafang and Jianguo (2007) and Namazi. andKermani (2008) find that extent of outside domestic ownership is positively associated with voluntary disclosures and hence their finding is in line with theoretical expectation. However, Eng and Mak (2003) find that ownership is not related to disclosure. The finding of Lakhali (2005) seems not to be in line with theoretical expectation.

White, Leg and Tower (2010) using an index of 78 items as intellectual capital disclosure index, the study delineated items relating to ICD in which 27 relate to employee, 14 for customer, 15 for process, 8 for R&D while the remaining 15 for strategy statement. The study with the id of the statistical analytical tools OLS; the results show that the extent of HCD has a positive significant relationship with country and size of company. Oliveras, Gowthorpe, Kasperskaya and Perramon (2008) investigated intellectual capital disclosure using sample of 12 listed companies in the Spanish Stock market, the study also employed content analysis method by using 28 indexes of items in their annual financial reports. The result showed that there is a greater disclosure in the area of external capital than internal and human capital of the sample companies. In another study by Brennan (2001), the study which examined eleven (11) knowledge-based Irish listed companies using content analysis with 24 indexes of measurement. The study reveals that the human capital disclosure level is low, and there is a significant difference between the market and book values of the assets of the sampled companies, except two companies.

De Silva, Stratford and Clark (2014) employing a longitudinal research designed approach studied human capital disclosure approach of New Zealand companies for the period of seven years. The study employed content analysis to examine the HC reporting of five 'knowledge intensive' companies and five 'traditional product-based' companies listed. The results revealed that human capital information disclosure increase between 2004 and 2010, the results failed to show any strong pattern connecting HCD to increase in the market value of the sampled companies. Furthermore the result also shows that the extent of HCD reporting is not determined by the type of industry.

Mahajan and Chander (2007) analyzed corporate disclosure practices of Indian companies using software firms' sample. The study found a big variation in disclosure practices among the firms in the software industry and also a significant association between disclosure level and determinants like size, profitability and industry type.

Bukhet *et al.*, (2005) studied human capital related information on non-financial related knowledge based information. The key objective of the study is to find out the extent of human capital information disclosed in Danish Initial Public Offering (IPO) and the level of voluntary HC information disclosed in the prospectuses. The study employed index analysis method to identify amount of information relating to HC included in the prospectuses. The study found a substantiate increase on the level of voluntary HC information disclosed in IPO of Danish listed companies. Furthermore, the results revealed that the percentage of managerial ownership before the IPO and industry type affect the amount of voluntary Human capital disclosure, while company size and age do not affect disclosure.

## METHODOLOGY

### Research Design

The research design adopted for this study is a combination of a cross-sectional and longitudinal research design. The choice of this design is based on the nature of the study which is a cross sectional study and over a long period of time. With this design, the researcher collect data that were used to investigate the determinants of intellectual capital disclosure on the companies quoted Nigerian Stock Exchange (NSE).

### Population and Sampling

The population of the study was 78 randomly selected quoted firms on the Nigerian Stock Exchange (NSE) as at 31st December, 2019 (Facts book, 2019). For the purpose of selecting our sampled companies, the Yaro Yamani (1964) formula for sample size determination was used and we arrived at a study sample of sixty five (65) quoted firms on the Nigeria Stock Exchange.

**Sources of Data**

This study is based on secondary data. The financial data of individual companies have been collected from the annual reports and accounts of companies listed on Nigerian Stock Exchange (NSE).

**Model Specification**

In the light of the research design, a multiple regression model is used in this study. A multiple regression model seeks to explain variations in the value of the dependent variable on the basis of changes in the independent variables. The assumption is that, the dependent variable is a linear function of the independent variable. The model for this study is an adaption and modification of the model of Fernando and Macagnan (2012). The model as applied by them is shown in empirical form:

$$DL = \beta_0 + \beta_1 (\text{company size}) + \beta_2 (\text{company growth}) + \beta_3(\text{ownership diffusion}) + \beta_4(\text{profitability}) + \beta_5(\text{leverage}) + \beta_6(\text{growth}) + \epsilon \dots\dots\dots(1)$$

Where: DL = level of human capital disclosure of the company score;  $\beta_0$  = regression intercept; the other  $\beta$ s are the parameters of the Model. The study modified this model by dropping the variables: ownership diffusion and growth, and adding industry type and company age adoption. It is worth clarifying some aspects of measuring the level of intellectual capital disclosure ICD. Disclosure is recognized as an abstract concept that cannot be measured directly. Empirical research on this issue use indexes constructed from indicators that better represent the information to measure the disclosure. The index is numerical result that represents that amount of information disclosed by the company.

Consequently, the model for this study is thus:

$$ICD = \beta_0 + \beta_1 \text{ PROF} + \beta_2 \text{ FME} + \beta_3 \text{ FINLEV} + \beta_4 \text{ INDST} + \beta_5 \text{ AGE} + \epsilon_{it} \dots\dots\dots (2)$$

Where:

ICD = Level of intellectual capital information disclosures index

FMS = Firm size (proxied by natural logarithm of total assets)

PROF = Profitability (proxied by return on assets)

FINLEV = Financial leverage (proxied by debt-equity ratio)

INDST = Industry type (dummy Variable, 1 if financial otherwise zero if non-financial)

AGE = company age (number of years passed since incorporation)

$\epsilon_{it}$  = error term

$\beta_0, \beta_1, \beta_2, \beta_3, \beta_4,$  and  $\beta_5$  = coefficients

The apriori expectation of the above model is, =  $\beta_0 > 0, \beta_1 > 0, \beta_2 > 0, \beta_3 > 0, \beta_4 > 0, \beta_5 > 0$ .

**Method of Data Analysis**

The data analysis techniques adopted in this study are the ordinary least square data regression techniques. The use of OLS data regression method is based on four fundamental justifications: (1) the data collected had time and cross-sectional attributes and this will enable us to study determinants of ICD over time (time series) as well as across the sampled firms (cross-section). (2) OLS data regression provides better results since it increases sample size and reduces the problem of degree of freedom. (3) The use of panel data regression would avoid the problem of multi-colinearity, aggregation bias and endogeneity problems. (4) Panel data regression analyses help to capture the individual cross-sectional (or firm-specific) effects that the various pools may exhibit with respect to the dependent variable in the model.

The specified linear multiple panel data for this study is estimated using Unobserved Effects Model (UEM) which can either be fixed effect or random effect depending on assumptions made about the distribution of the unobserved component and the error term. In empirical analysis, the random effect can hardly hold but in the Generalized Least Squares (GLS) transformation, the cross section weights (a feasible GLS specification assuming the presence of cross-section (heteroskedasticity) that involves random analysis will augment the consistency of estimator.

The ordinary lest square regression results is evaluated using individual statistical significance test (T-test) and overall statistical significance test (F-test). The goodness of fit of the model is tested using the coefficient of determination (R-square). In

this study, we also conduct descriptive statistics to show characteristics among variables. In conducting our data analyses, we used Eviews 7.0 software.

### Measurement of Variables

Our dependent variable is Intellectual Capital Disclosure while, firm size, leverage, profitability, industry type and company age are the independent variables for the study. The operational definitions of variables are offered in the table below:

**Table 3: Summary of Previous Empirical Studies on HCD Determinants.**

S/NO	VARIABLES	DESCRIPTION	MEASUREMENT	USED BY	OUTCOME
1	ICD	Intellectual capital disclosures	ICD index (Appendix 1)	Fontana and Macagnan (2014)	NA
2	FMS	Firm size	Proxied by natural logarithm of total assets of firms.	Bukh et al (2005)	Positive
3	PROF	Profitability	Proxied by return on assets (ROA) of firms	Enofe, et al (2013)	Positive
4	FINLEV	Financial leverage	Proxied by debt-equity ratio of firms	White et al (2010)	Positive
5	INDST	Industry type	Dummy variable equal to "1" if the firm is in financial industry and "0" otherwise	Mohiuddin et al (2006)	Negative
6	COMPANY AGE	AGE	Number of years since incorporated	Alfaraih&Alanezi (2011)	Positive

SOURCE: Researchers Compilation from Various` Sources (2017)

## DATA PRESENTATION AND ANALYSIS

### INTRODUCTION

As mentioned in the previous section, the ordinary least square data regression technique is adopted and used for the analysis. In order to present a robust investigation and analysis of the study, two general methods are used in the empirical analysis. First, in order to provide a background to the empirical analysis, statistical examination is carried out on the data so as to generate the initial characterization of the data used in the study. Second the presentation and analysis of the regression results is performed. As stated in the previous section, the Eviews 8.1 Econometric software is used for the summary statistics as well as the Econometric estimations.

### Data Analyses and Interpretation

Basically, five tables are presented and their numeric implication are analysed after each table. These tables provide numeric information about the descriptive nature of the data gathered amongst other things.

### Descriptive Statistics

#### Table 4.1 Descriptive Statistics

	ICD	PROF	LEV	INDST	AGE	LFMS
Mean	6.865823	0.082912	0.576600	0.316456	35.26076	4.292177
Median	7.000000	0.055200	0.228400	0.000000	39.00000	4.150000
Maximum	10.00000	1.369500	21.80490	1.000000	90.00000	7.270000
Minimum	3.000000	-0.806800	-0.503500	0.000000	1.000000	1.860000
Std. Dev.	1.712813	0.131427	1.582850	0.465683	18.68671	0.907313
Skewness	-0.319001	2.376975	8.422854	0.789280	0.091709	0.528806
Kurtosis	2.108359	32.51056	94.45094	1.622963	2.454894	3.684071
Jarque-Bera	19.78407	14705.08	142316.1	72.22053	5.444129	26.11106
Probability	0.000051	0.000000	0.000000	0.000000	0.065739	0.000002
Observations	395	395	395	395	395	395

SOURCE: Researcher's Compilation (2021)

The results of the descriptive Statistics revealed JarqueBera statistics of 19.78407 for Intellectual capital disclose (ICD) with an almost near perfect high significant probability values for all the variables (for instance the PV of ICD is 0.000051) of which are below the 0.05 bench mark. The results of the standard deviation indicated a very small dispersion of the variables from their respective mean values with the exception of the variable of age (AGE) which reported a large dispersion of 18.68671. The standard deviation of ICD is 1.713 and it is also relatively a little lower in relation to the mean value. In the same vein, the skewness coefficient of -0.319 suggests that, the HCD characteristics among the companies are generally centered and moving along the mean value.

The results also revealed that, on the average the mean value of Intellectual capital disclose (ICD) for the sampled period under consideration is approximately 6.866 while the maximum and minimum of ICD is 10 and 3, this implies that the sample companies on the average disclosed 10 items in the disclosure index and the lowest numbers of items disclose relating to human capital disclosure is 3, this is considered to be poor compared to order countries. The mean value of financial leverage (LEV) is 0.577 and the maximum and minimum values are 21.805 and -0.5035, this means that the percentage of fixed interest finance of the companies selected is high. Moreover, the variable of industry type (INDST), on the average the mean value reported 0.316 while the minimum and maximum values are 1 and 0. This outcome is possible because of the dummy variable adopted identifying whether it is a financial and nor financial companies.

The output also revealed that firm size (LFMS) using the log of total assets reported a mean value of 4.292. The minimum and maximum amounts LFMS are 7.27 and 1.860 respectively. On the average, PROF is 0.083 and company age (AGE) recorded an average of 35.26 with maximum values of 90 and 1, it should be noted that the oldest sampled company is 90 years and young is 1 as should in the table 3 above

#### Empirical Results of the Analysis

We conduct our econometric analysis to test for the behavior of the study variable especially towards the dependent variable within the econometric data analysis framework. The study also estimated the variable to test for the study hypothesis.

#### Correlation Analysis

In an attempt to explore the relationship between variables used in the study, we carried out correlation analysis using Pearson product moment correlation method in the table 4 below.

**Table 4.2 Correlation Matrix**

Covariance Analysis: Ordinary

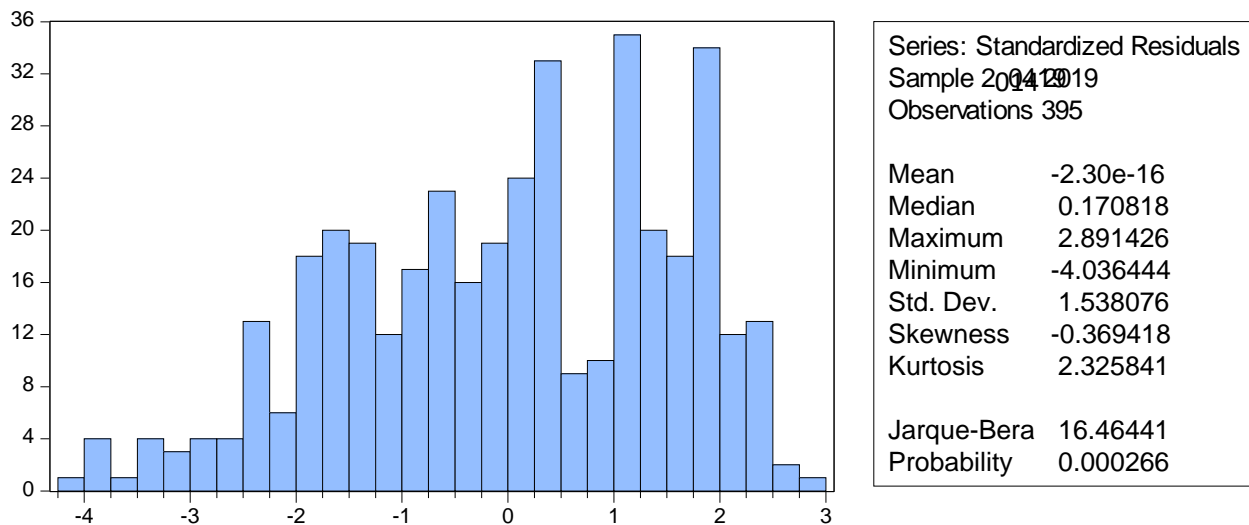
Correlation t-Statistic Probability	HCD	PROF	LEV	INDST	AGE	LFMS
HCD	1.000000 ----- -----					
PROF	-0.041561 -0.824633 0.4101	1.000000 ----- -----				
LEV	0.084322 1.677583 0.0942	-0.049256 -0.977655 0.3288	1.000000 ----- -----			

INDST	0.136102	-0.346829	-0.028657	1.000000		
	2.723461	-7.330646	-0.568332	-----		
	0.0067	0.0000	0.5701	-----		
AGE	0.326217	0.091207	-0.077296	-0.183338	1.000000	
	6.841246	1.815684	-1.536924	-3.697193	-----	
	0.0000	0.0702	0.1251	0.0002	-----	
LFMS	0.158788	-0.187916	0.054274	0.038912	-0.091069	1.000000
	3.188292	-3.792865	1.077528	0.771992	-1.812905	-----
	0.0015	0.0002	0.2819	0.4406	0.0706	-----

**SOURCE: Researcher’s Compilation (2021)**

The table 4.2 above shows the behavior and the relationship between the variables of the study. The table shows that the co-efficient of correlation of a variable with respect to itself is 1.000. This indicates that there exists a perfect correlation between a variable with respect to itself. The result also showed that there exists a high positive and significant relationship between Intellectual capital disclose (ICD), with industry type (INDSY), firm size (LFMS), financial leverage (LEV) and company age (AGE). This means that the strength of relationship between INDST, LEV, AGE and LFMS with Intellectual capital disclosure (ICD) is quite strong, except for the variable of profitability (PROF) that negatively correlate Intellectual capital disclosure (ICD). The statistical implication of this is that INDST, LEV, AGE and LFMS with Intellectual capital disclose (ICD) had significant relationships since there p-values >0.05 with them but there is insignificant relationship between profitability (PROF) and Intellectual capital disclose (ICD) as shown in the table below. The output is indicative a normal distribution of the regression variables. This is further attested by the result of the diagnostic and normality test as shown below;

**Histogram normality test**



**Figure 2**

The result of the histogram normality test shows average Jarque-Bera value of 16.46441 and a significant probability value of 0.000266 which shows that the regression variables follow the Gaussian normal distribution. The mean kurtosis of 2.325841 is almost close to the 3.00 benchmark and indicative of a leptokurtic result. The positive skewness of -0.369418 indicates that the histogram is skewed to the left hand side. The average standard deviation of 1.53806 shows relative a dispersion from the mean which is a reflection of the quality of the regression data.

**Diagnostic Tests**

To ensure reliability and validity of the empirical results, some diagnostic tests were conducted. In order to test for the presence of multicollinearity in the model, the Variance Inflation Factor (VIF) was carried out, the Heteroskedasticity test was conducted using Breusch-pagan-Godfrey test, while mis-specification test is conducted using the Ramsey Reset Test to ascertain whether our model is correctly specified.

**Table 4.3 Variance Inflation Factor**

Variance Inflation Factors

Variable	Coefficient Variance	Uncentered VIF	Centered VIF
C	0.201910	33.11673	NA
PROF	0.416943	1.652301	1.180859
LEV	0.002466	1.148152	1.013003
INDST	0.033204	1.713964	1.174544
AGE	1.83E-05	4.787013	1.050239
LFMS	0.007753	24.45869	1.046057

**SOURCE: Researcher's Compilation (2021)**

The result of the variance inflation factor in table 3 shows the absence of multicollinearity. The centered VIF values of the explanatory variables are far below the benchmark of 10. With the exception of two variables, the centered VIFs are not substantially different from 1.00 and are not indicative of the problem of multicollinearity.

**Table 4.4 Result of the classical regression assumptions**

<i>Diagnostic Test</i>	<i>F-Statistic</i>	<i>Probability</i>
<i>Heteroskedasticity</i>	2.792756	0.0171
<i>Serial Correlation</i>	112.0651	0.0000
<i>Ramsey RESET</i>	0.010076	0.9201

**SOURCE: Researcher's Compilation (2021)**

The results of the classical regression diagnostics accepted the null hypotheses. The result of the test of serial correlation shows that the regression variables are not serially correlated. The Breusch-Pagan-Godfrey test of heteroskedasticity accepted the null hypothesis of heteroskedastic residuals and rejected the alternate of homoscedastic residuals. The result of the test of heteroskedasticity reported a probability value of 0.0171 which is below the benchmark of 0.05. The probability value of the result of the serial correlation of 0.0000 indicative of a perfect probability and is sufficiently below the benchmark of 0.05, hence, the null Hypothesis of a serial correlation is accepted. The result of the Ramsey RESET test of model accuracy rejected the null hypothesis of a misspecified model and accepted the alternate of a well specified model. The probability of the Ramsey RESET of 0.9201 is also above the benchmark of .05, hence, the alternate hypothesis was accepted.

**Regression Result****Table 4.5 Estimation of the Regression Equation**

Dependent Variable: HCD

Method: Panel Least Squares

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	3.732824	0.448410	8.324586	0.0000
PROF	0.506224	0.644847	0.785029	0.4329
LEV	0.121519	0.049591	2.450427	0.0147
INDST	0.796936	0.181430	4.392536	0.0000
AGE	0.035573	0.004275	8.322025	0.0000
LFMS	0.352836	0.087899	4.014085	0.0001
R-squared	0.193627	Mean dependent var	6.865823	
Adjusted R-squared	0.183262	S.D. dependent var	1.712813	
S.E. of regression	1.547929	Akaike info criterion	3.726787	
Sum squared resid	932.0773	Schwarz criterion	3.787226	
Log likelihood	-730.0404	Hannan-Quinn criter.	3.750733	
F-statistic	18.68141	Durbin-Watson stat	0.454600	
Prob(F-statistic)	0.000000			

**SOURCE: Researcher's Compilation (2021)**

From the results of the ordinary least square (OLS) regression above, it is observed that, profitability (PROF), industry type (INDSY), firm size (LFMS), financial leverage (LEV) and company age (AGE), explains about 19.4% of the total systematic variation in Intellectual capital disclose (ICD) while about 80.6% of the systematic variations in ICD were left unexplained by the model. When the model was subject to an adjustment using the adjusted R-square all the variables explained 18.3% of the systematic variation in the dependent variable. This means that our explanatory variables accounted fairly for the changes in ICD among our sampled companies and other factors may account duly for the behavior in human capital disclosure which was not specified in the study model.

On the basis of the overall statistical significance of the model as shown by F-statistics it was observed that the model was statistically significant since the calculated F-value of 18.68141 and associated probability value of 0.000000, are greater than the critical F-value at 5% level of significance (P-value of 0.000000 is perfect prob.). This means that the overall model is statistically significant. The Durbin Watson with a value of 0.454500 is indicative of first order autocorrelation in the model.

Financial leverage, industry type age of the company and the size of the company, had significant positive relationships with human capital disclosure in Nigeria among the sample companies since their probability values and coefficient of variation are both significant and positively related to ICD as indicated above; (0.121529 and 0.0147; 0.796936 and 0.0000; 0.035573 and 0.0000; 0.352838 and 0.0001), were less than the absolute critical t-values at 5% level of significance (p-values >0.05). The result also revealed that the variables of profitability (PROF), had an insignificant positive relationship with human capital disclosure with a coefficient of variation of 0506224 and associated probability of 0.4329 on the basis of the probability had a positive but statistically insignificant relation with ICD. The result also showed that LEV, INDST, AGD and LFMS agree with the *a priori* expectation in of the model, but PROF fail to agree with *apriori* expectation of the model.

**Hypothesis Testing****H<sub>01</sub>: there is no significant relationship between intellectual capital disclosure and firm profitability.**

As shown in table 8, the result also revealed that there is a positive but insignificant relationship between intellectual capital disclosure and profitability with a probability value of 0.4329 above the critical value of 0.05, while the coefficient of variation and t-statistic revealed insignificant statistic 0.506224 and 0.783029 respectively. The result disagrees with the *apriori* expectation and failed the test of significance. Therefore, the null hypothesis is accepted and alternative hypothesis rejected.

**H<sub>02</sub>: there is no significant relationship between intellectual capital disclosure and firm size.**

Given the regression output in table 8, the result also revealed that there is a positive significant relationship between intellectual capital disclosure and firm size with probability value, coefficient of variation and t-statistic of 0.0001, 0.352838 and 4.014085 respectively. Since the computed is less than the critical value of 0.05, the null hypothesis is not accepted and alternative hypothesis accepted. The variable of firm size passed the test of significance and agrees with our *apriori* expectation of the study.



**H<sub>03</sub>: there is no significant relationship between intellectual capital disclosure and financial leverage.**

Given the regression output in table 8, the result revealed that there is a positive significant relationship between intellectual capital disclosure and financial leverage with a probability value of 0.0147 less than the critical value of 0.05, while the coefficient of variation and t-statistic revealed a significant statistic 0.121529 and 2.450427 respectively. The result agrees with the apriori expectation and passed the test of significance. Therefore, the null hypothesis is rejected and alternative hypothesis accepted.

**H<sub>04</sub>: there is no significant relationship between intellectual capital disclosure and industry type.**

Given the regression output in table 8, comparing it with the critical value of 0.05 as our bench mark, the null hypothesis is rejected and alternative hypothesis accepted give the probability value of 0.0000, coefficient of variation of 0.796936, t-statistic of 4.392536 which is less than the critical value. The result agrees with the apriori expectation and passed the test of significance.

**H<sub>05</sub>: there is no significant relationship between intellectual capital disclosure and firm age.**

Finally, as shown in table 8, the result also revealed that there is a positive and significant relationship between intellectual capital disclosure and company age as define by the date or year that the company was listed with a probability value of 0.0000 less than the critical value of 0.05, while the coefficient of variation and t-statistic revealed insignificant statistic 0.035573 and 8.314596 respectively. The result agrees with the apriori expectation and passed the test of significance. Therefore, the null hypothesis is rejected and alternative hypothesis accepted.

## Discussion of Findings

Our discussion of findings is based on the decision rule which is to reject the null hypothesis and accept the alternative if the probability value of the variable is less the critical value. Considering the individual coefficients of the explanatory variables, the findings made from the empirical analysis are:

### PROFITABILITY

The result of the statistical analysis found that profitability (PROF) had a positive but not significant relationship with intellectual capital disclosure (ICD) in Nigeria since the coefficient of PROF variable is positive but fails the five percent significance test. This result suggests that firms that are better managed and show better return in terms of profitability do not significantly determine the level of the capital capacity at their disposal, what this means is that as profit increase less human capital resources of the organisation are disclosed in Nigeria. On account of the finding, the null hypothesis is rejected because the level of profitability is not a significant determinant of the human capital disclosure. Hence, it was concluded that the level of profitability is an insignificant determinant of intellectual capital activities in Nigeria. Sharma (2012), Vafaei, Taylor and Ahmed (2011), Adebawojo, et al., (2015), Salman and Dandago (2013), Tan Plowman and Hancock (2007) and Enofe, Mgbame and Ovie (2013), found positive and significant relation between profitability and human capital but, Micha, Ofurun and Ihendinihu (2012) found a non-significant relationship between PROF and intellectual capital disclosure.

### FINANCIAL LEVERAGE

From the result in the regression estimation above, it was found that LEV had a significant positive relationship with intellectual capital disclosure (ICD) in Nigeria since the coefficient of financial leverage variable passes the five percent significance. Arising from this outcome, we accept the alternative hypothesis that financial leverage is a significant determinant of human capital disclosure in Nigeria. This result suggests that as the level of financial leverage increases the amount of intellectual capital information disclose increases in the same rate of increase with financial leverage, this make sense to say company will intend to prove their human capital capacities to secure long term debt.

The finding of this study is in line with the works of Wallace et al., (1994); Inchausti, (1997); Alsaeed, (2006); Huafang and Jianguo, (2007); Chau and Gray, (2010); Malone et al., (1993); Hossain et al., (1995) while Eng and Mak (2003) and Kang and Gray (2011) found a negative relationship between financial leverage and intellectual capital disclosure

### INDUSTRY TYPE

The result of the panel regression as shown in table 8, the result revealed that industry type (IDST) had a positive and significant positive relationship with intellectual capital disclosure (ICD) in Nigeria since the coefficient of INDST variable passed the five percent significance test. Flowing from this outcome, we reject the null hypothesis and accepted the alternate hypothesis that industry type has no significant relationship with intellectual capital disclosure (ICD) in Nigeria. This means that intellectual capital disclosure (ICD) is sensitive to the nature of the firm or the industry it belong to, for instance, among the sampled companies for this study and the 15 item checklist used for the study non-financial companies disclosed between 3 and 12 human capital information while the financial companies discloses between 4 to 10 human capital related information.. Bukhet *al.*, (2005) and Mahajan and Chander (2007) findings is consistence with this result but the study of Brennan (2001) fond a low association between industry type and human capital disclosure.

### COMPANY AGE

Finally the result also shows that the null hypothesis cannot be accepted which states that company age (AGE) is not a significant determinant of intellectual capital disclosure (ICD) in Nigeria. The coefficient of the AGE variable passed the significance test at the five percent level of significance for all the years and is therefore a strong determinant of intellectual capital reporting in Nigeria. This is consistent with the findings of Glaum & Street (2003).

Theoretical evidence have proved that older companies disclose more information than younger firms in order to reduce information asymmetry cost and the high cost of information too high for new established firm to disclose and the associated competitive advantage. The finding of this study also validate this theoretical postulate as shown in table 8, the result shown a positive and significant relationship between firm age and accounting information disclosure, and studies have been consistent with this findings Glaum and Street (2003), Damodaran (2009) and Haniffa and Cooke (2002). This findings state older firms this more information than young once.

## **FIRM SIZE**

Firm size (LFMS) had a positive relationship with intellectual capital disclosure (ICD), as shown in the panel result in our estimation of variables. The coefficient of LFMS passed the test of significance five percent level of significance in the results and hence, there is a positive and significant relationship between LFMS and ICD. Based on the result we reject the null hypothesis but accept the alternate hypothesis that states there is a significant relationship between firm size (LFMS) and intellectual capital disclosure (ICD) in Nigeria.

Judging by the outcome of our study, LFMS is a strong factor or determinants in a firm's decision of the choice to disclose intellectual capital activities in Nigeria. It goes to show that the firm size as proxied by log of total assets is a function of the decision to disclose human capital activities of the firm and we can also conclude that large firms disclose human capital related information than firms with smaller sizes. The result is confirmed by the studies of Subbarao and Zeghal (1997), Fernando and Macagnan (2002), Nurunnabi and Hossian (2011), Bruggen, Vergauwen and Dao (2009), Al Mamun (2009) and Syed (2009), revealed that firm size is positively related to the level of intellectual capital disclosure

## **SUMMARY OF FINDINGS, CONCLUSION AND RECOMMENDATIONS**

### **Summary of Findings**

Following the result of our investigation, we found out that:

1. profitability had a positive and statistically insignificant relationship with intellectual capital disclosure;
2. firm size had a positive and statistically significant relationship between with intellectual capital disclosure;
3. financial leverage had a positive and statistically significant relationship between with intellectual capital disclosure;
4. industry type had a positive and statistically significant relationship with intellectual capital disclosure and
5. company age had a positive and statistically significant relationship with intellectual capital disclosure.

### **Conclusion**

In conclusion, this study provides evidence about the determinants of intellectual capital disclosure in Nigeria for a sample of 65 Nigerian listed companies; data were collected from the annual reports. The theoretical framework was applied for social reporting comprising three dimensions, stakeholder theory, human capital theory, stewardship theory and economic performance. Specifically, the companies' provision and quality of voluntary employee-related disclosures was examined using a 15 item check list in relation to employee stakeholder power represented by employee disclosure in the annual financial reports of the companies. The study adopted firm profitability, firm size, industry type financial leverage and company age as the possible determinants of human capital disclosure.

Evidence in this study indicates that all the variables had a positive relationship with human capital disclosure. But in contrast, companies appear to use corporate employee-related disclosures to neutralise union power in their workplace as a regulatory risk management strategy rather full recognition of their total contribution to the value creating process in the company. The results also show that companies' economic performance represented in this study by return on assets shows no significant effect in the level human capital information disclosed. This research has progressed the understanding of what factors determine the quantity and quality of employee-related disclosures in Nigeria Company's annual reports.

The limited knowledge with regard to employee-related disclosures suggests a number of areas of interest. This study has focused on the motivations of management to supply the information for the annual reports. The demand side of this issue, stakeholders' need for information, and the extent of information at their disposal will help to reduce agency cost between owners and management. The disclosure of human capital information is therefore considered vital and important to signal investors about affairs of firms in an intense globally competitive economic environment. Disclosure of HC information in annual reports helps to make capital markets more efficient by reducing information asymmetry between 'insiders' and investors. Additionally, human capital disclosure helps the capital market to provide a more accurate market capitalization of firms.

### Recommendations

Following the analyses and the findings of this research work, these recommendations are made:

1. Investors in Nigeria Stock Market should make their investment in shares by watching the level of human capital information disclosed by the companies, in so much that the composition of the firm human capital is related to its financial performance.
2. Efficiency in the management of assets of a firm is used by investors in making their investment decisions. Managements are advised to manage the human capital since it correlates the firms efficiency
3. Companies are also advice to disclose employee related information, especially their contribution to the growth of the company, this will help to reduce information asymmetry problems.

### Recommendation for Further Study

Further study could be conducted to include more accounting variables and corporate governance attributes aside those in our models. This would expand the outlook on intellectual capital price determinants on Nigeria Stock Exchange Markets.

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