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EFFECT OF VOLUNTARY INTELLECTUAL CAPITAL DISCLOSURE ON FIRM VALUE OF QUOTED FINANCIAL SERVICES COMPANIES IN NIGERIA

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Abstract

The study examined the effect of voluntary intellectual capital disclosure on the firm value of quoted financial services companies in Nigeria from 2012 to 2021. The study adopted the longitudinal research design and positivism as the research philosophy. Thirty-seven companies were sampled from Fifty-two quoted financial services companies in Nigeria while the Panel multiple regression technique was employed for the analysis. The study found that voluntary human capital disclosure and voluntary structural capital disclosure have a positive significant effect on firm value while relational capital disclosure has a negative but insignificant effect on firm value of quoted financial services companies in Nigeria. The study recommends among others that financial services companies should consider incorporating the disclosure of comprehensive information on human capital and structural capital in their annual reports, sustainability reports, and other relevant documents. This should encompass information on workforce development, training initiatives, diversity and inclusion efforts, employee well-being programs, and retention strategies. This disclosure will provide investors with insight into how the companies are nurturing and developing their workforce. This can enhance investor confidence in the companies' long-term firm value and growth potential.

Keywords: *Voluntary, Intellectual capital, Disclosure, Financial services*

Introduction

The inadequacy/insufficiency of information provided by firms in the financial statements coupled with corporate scandals and the inability of the current accounting standards to show the value of intangible assets on the statement of financial position have all contributed to the clamour for more voluntary disclosure of information by investors and other stakeholders. This call was heightened after the global financial crises of 2007-2008 with devastating consequences on businesses and the global economy at large.

Since the main objective of financial statements is the disclosure of information to investors and other users of financial statements, the need for optimal corporate disclosure cannot be over-emphasized.

Several studies have been carried out on intellectual capital disclosure and firm value with mixed results. Many of the previous studies have been based on developing economies with few studies on a developing economy like Nigeria. This study adds to the existing literature on the subject and is focused on a developing economy.

The financial services companies in Nigeria have been chosen for this study because of the critical role they play in financial intermediation and economic development. The financial

services sector is also one of the major employers of labour in the Nigerian economy. The Nigerian financial services sector consists of banks and non-bank financial institutions which are regulated by the Central Bank of Nigeria and the Federal Ministry of Finance, Nigeria Deposit Insurance Corporation (NDIC), the Securities and Exchange Commission (SEC), the National Insurance Commission (NAICOM), and the Federal Mortgage Bank of Nigeria (FMBN). At the apex of the Nigerian financial system is the Central Bank of Nigeria (CBN) which was established in 1958.

Disclosure is classified into mandatory and voluntary. While mandatory disclosure is required by regulation or statutory stipulations, voluntary disclosure is made at the instance of the firm. Voluntary information disclosure refers to sharing information publicly other than what is required by laws or regulations and it is done for the sake of enhancing the image of a company in the eyes of investors, analysts and other stakeholders and also for risk avoidance. There is a demand for more disclosure hence, firms have started to supply some additional information to fill the disclosure gap in response to the dissatisfaction expressed by stakeholders.

One of the types of information disclosure desirable by stakeholders for effective investment analysis is the information on intellectual capital. Studies on intellectual capital have been brought to the fore in the past few decades because the world has moved into an age ruled by information. Subsequently, the global economy has shifted from a manufacturing-based economy to an economy based on knowledge (Ellis & Seng, 2015). In this new knowledge-based economy, intangible assets such as intellectual capital (IC) have been noted to be more important for value creation than physical assets (Whiting & Miller, 2008). This notion that IC drives firm performance and value has also been supported in the literature (Clarke et al., 2011; Vafaei et al., 2011). Intellectual Capital has become more important to companies. This established importance has not been recognized by regulators, however. Currently, there are insufficient mandatory standards for the disclosure of IC resources. Because of this, there has been a decrease in the book value of company assets in proportion to their market value (Cezair, 2008). This gap between market and book values (hidden value) has been attributed to the market valuation taking into account intellectual capital (Whiting & Miller, 2008).

Salvi et al. (2020) also asserted that due to the transition from a manufacturing-based to a knowledge-based economy, the relevance of intellectual capital in firm value-creation processes has significantly increased. Considering that traditional financial disclosures do not contain IC-related information, various stakeholders have long asked companies to voluntarily disclose their intellectual resources so that they can be incorporated into firm performance considerations and valuations.

Putra and Ratnadi (2021) confirmed that globalization, technological innovation, and intense business competition are forcing companies to change their business practices. There has been a shift from industrial-based businesses to technology-based and knowledge-based businesses. A company's existence is now determined by knowledge and technology, rather than traditional capital such as natural resources, financial resources, and other tangible assets (Oktavianti & Wahidahwati, 2014). Technology and company knowledge are stored in the intellectual capital they have so intellectual capital has become the heart of knowledge-based growth (Rahim et al., 2011). For an enterprise to survive, enterprises must swiftly transform the strategy from a labor-based to a knowledge-based business to become a science-based enterprise. Alongside economic

changes characterized by a science-based economy with the application of knowledge management, a company's prosperity will be dependent on a transformation of knowledge creation and capitalization (Sawarjuwono, 2003). Intellectual capital can help companies whose profits are influenced by innovation and knowledge-intensive services to increase their profits (Edvinsson & Sullivan, 1996). Companies, investors, and analysts want more reliable information about managerial quality, expertise, experience, integrity, customer relationships, and personal competence amongst others. These are intellectual capital-related factors. There is a greater appreciation for intellectual capital's ability to create and sustain competitive advantage and shareholder value. For example, Apple Inc.'s global annual revenue in fiscal 2017 was $ 229 billion. Apple is the world's largest information technology company in terms of revenue, as well as the world's third-largest mobile phone manufacturer, trailing only Samsung and Huawei. In August 2018, Apple became the first company in the United States to go public with a market capitalization of more than $1 trillion. Apple's company value is based on intangible intellectual assets rather than tangible assets. Intellectual capital refers to a company's broad knowledge capacity. Many studies, according to Lev and Zarowin (1999), show that the current accounting model cannot capture the key factor of a company's long-term value, namely intangible resources. Financial reports are thought to fail in describing a wide range of intangible asset values (Lev & Zarowin, 1999), resulting in increased information asymmetry between companies and users (Barth et al., 2001) and inefficiencies in the capital market's resource allocation process (Li et al., 2008). The failure of accounting to fully recognize intangibles (such as human resources, customer relationships, and structural capital) confirms the claim that traditional financial reports have lost their relevance as a decision-making tool (Oliveira et al., 2006). Companies primarily recognize intellectual capital to increase company value. Companies need physical capital, financial capital, and intellectual capital to achieve their goals. Bukh et al. (2001), Guthrie and Petty (2000), and Mourtisen et al. (2005) identified that the intellectual capital literature in accounting mainly discusses external reporting which can cause an information gap between the book value of a company's equity and market value. Purnomosidhi (2006) stated that the information needs of users of financial statements can be met if companies disclose intellectual capital voluntarily.

Saifi (2021) described Intellectual capital as a form of intangible capital which has become widely accepted as the company's main strategic asset that is capable of producing a sustainable competitive advantage and superior financial performance. The study asserted that human resources depend on employees, such as competence, commitment, motivation and employee loyalty. Although human capital is recognized as the heart of intellectual capital creation, a characteristic feature of human resources is that it can disappear when employees leave.

Lee and Guthrie (2010) stated that Intellectual Capital is a resource derived from knowledge, experience, and staff competencies that can be transferred, starting from the ability of the organization to innovate and manage change, to its infrastructure and the relationship between stakeholders and partners.

The International Integrated Reporting Framework (2022) described Intellectual Capital as organizational knowledge-based intangibles including intellectual property, such as patents, copyrights, software, rights and licenses, and organizational capital such as tacit knowledge, systems, procedures and protocols.

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Some studies have opined that one way a company can maximize firm value is by owning intellectual capital and disclosing intellectual capital (Subaida et al., 2018). According to Choo and Bontis (2002), intellectual capital represents the existing knowledge within an organization at a particular time. Companies' intellectual capital consists of human resources, structure, organizational routine, intellectual property, and a relationship between the company and customers, suppliers, distributors, and corporate partners.

Intellectual capital disclosure is a new form of communication that aims to control the relationship between management and workers whereby managers can create strategies to meet stakeholders' requests and convince stakeholders of the benefits of their company policy (Subaida et al., 2018). Stakeholders want more reliable information about factors related to intellectual capital and so companies have begun to realize the importance of intellectual capital disclosure. Intellectual capital disclosure is embodied in reports made to meet the users' needs for general information (Abeysekera, 2006). Bhasin (2012) added that various forms of intellectual capital disclosure provide valuable information to investors as they help reduce uncertainty about prospects and facilitate a more precise assessment of the company.

Saifi (2021) defined Intellectual Capital Disclosure as a disclosure or reporting of the intellectual capital of a company. Intellectual capital disclosure is a signal that the company has high performance and a good future so intellectual capital disclosure has the potential to influence company performance. Signalling theory states that companies should signal their superiority in the market; this signal will make investors and stakeholders assess and make decisions that are more profitable for the company (Whiting & Miller, 2008).

Guthrie and Petty (2000) opined that Intellectual Capital disclosure now provides greater benefits than in the past, especially for sectors that have transitioned from high reliance on plant and machinery to high reliance on intellectual capital for example companies relying on high technology, financial and insurance services.

Neysi et al. (2012) cited Abeysekera and Guthrie (2002) who defined Intellectual Capital Disclosure as a report intended to meet the information needs common to users who are unable to command the preparation of reports about Intellectual Capital tailored to satisfy specifically all of their information needs.

There are many reasons why companies disclose intellectual capital information in their annual reports. Intellectual Capital Disclosure (ICD) helps organizations formulate their strategies; assess strategy execution; assist in diversification and expansion decisions; can be used as a basis for compensation; and communicate measures to external stakeholders (Marr et al., 2004). According to Pricewaterhouse Coopers (1999), disclosure of intellectual capital has several benefits for the organization. Some of these benefits include enhancing transparency in terms of more disclosure of information on intangible assets; helping inspire a sense of faith among the workforce and other major stakeholders; and supporting the long-term vision of the organization. ICD is a very effective means for companies to signal quality and excellence because of the importance of Intellectual Capital (IC) for wealth creation in the future (Guthrie & Petty, 2000). Especially for companies with a strong IC base, ICD can distinguish them from other low-quality companies (An et al., 2011). Signals from IC attributes can bring many benefits to the company, such as improving the company's image, attracting potential investors, lowering capital costs, decreasing stock volatility, creating an understanding of products or services, and more

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importantly improving relationships with various stakeholders (Singh & Van-der-Zahn, 2008; Vergauwen & Alem, 2005). The various forms of intellectual capital disclosure provide valuable information for investors and help reduce uncertainty about prospects while facilitating a more precise valuation of the company (Bukh, 2003).

Intellectual capital disclosure also comes at a cost such as the cost of gathering, processing, and interpreting the necessary data. Vergauwen and Alem (2005) identified three other opposing factors for intellectual capital disclosure, such as the transparency drawback in competitive markets; regulatory barriers; and auditor conservatism.
In classifying intellectual capital into its various components, Guthrie and Petty (2000) categorized intellectual capital into internal structure, external structure and human capital. Sveiby (1997) suggested that the concept of intellectual capital can be categorised into human, structural and organisational capital. According to Kalkan et al. (2014), there are three basic components of intellectual capital, namely human capital, structural capital, and customer capital. However, Anifiwoshe et al. (2017) cited earlier studies by Anam et al. (2012); Bontis (1996); Bounfour (2003); Brooking (1996); Edvinsson and Malone (1997); and Marr and Chatzkel (2004) which classified IC into three components: human capital, structural capital and relational capital.

Human Capital
Human capital can be in the form of employees' knowledge, skills, and abilities. Human capital is also a combination of the human ability in an organization to solve problems faced by the business. Creativity and innovation that exist within the company can also be triggered by human capital. Human capital includes the competence, skill, experience and intellectual abilities of individual employees (Edvinsson & Malone, 1997; Roos et al., 1997; Stewart, 1997). The International Integrated Reporting Framework described human capital as peoples' competencies, capabilities and experiences, and their motivations to innovate, including their alignment with and support for an organization's governance framework, risk management approach, and ethical values; ability to understand, develop and implement an organization's strategy, and loyalties and motivations for improving processes, goods and services, including their ability to lead, manage and collaborate.

Structural Capital
Structural capital can be described as a supportive infrastructure that allows human capital to function. Structural capital includes software, processes, patents, trademarks, organization's image, organization's information systems and databases. It consists of organizational ability, the company's tradition, process, and other intellectual aspects that are attached to the organization. Structural Capital is permanently attached to a company and fails to vanish as long as the company exists. Structural capital consists of processes, methods, brands, intellectual property structure and other intangibles owned by the entity but hidden in the statement of financial position (Bounfour, 2002; Brooking, 1996; Edvinsson & Malone, 1997; Stewart, 1997).

Relational Capital
Relational Capital is an asset which appears in the establishment of a relationship with external stakeholders. Relational capital is the relationship between a company and its customers and suppliers, government, and business partners in the same industry, along with the company's reputation. Relational capital, which is also referred to as customer capital, is believed to be influenced by the sustainability of the company. Relational (customer) capital, which is a transitional type of IC, is made up of knowledge in groups and networks of knowledge resources

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embedded within and derived from a link of relationship between organizations and customers (Edvinsson & Malone, 1997; Roos et al., 1997; Stewart, 1997).
Several studies have been done on the relationship between ICD and firm value with mixed results. Putra and Ratnadi (2021) found a positive impact of ICD on firm value. Saifi (2021) found a significant effect of ICD on firm value while Salvi et al. (2020) also found a significant relationship. Rahman et al. (2020) found a positive relationship between ICD and firm performance. Primasari (2019) found a positive relationship between ICD and firm value. Similarly, Astiti et al. (2018) found a positive relationship. Subaida et al. (2018) found that ICD has a positive influence on firm value. However, Hatane et al. (2018) found no influence of ICD on firm value. Anifowoshe et al. (2017) found a positive and significant relationship between ICD and firm value. Ellis and Seng (2015) found a positive relationship between Human Capital and firm value but a negative and significant association between Structural Capital and firm value.

Measurement of Intellectual Capital Disclosure
This study measured ICD under three distinct domains which include Human Capital Disclosure, Relational Capital Disclosure and Structural Capital Disclosure. The ICD checklist is adapted from Li et al. (2008) which is the most comprehensive checklist for ICD comprising 61 items, 22 items for Human Capital disclosure, 21 items for Relational capital disclosure and 18 items for Structural capital disclosure.

Concept of Firm Value

Investors regard value as the fundamental reason for investing in a particular firm. Stock value can be in the form of capital appreciation/depreciation (as obtained in the Nigerian Exchange Group, NGX), plus dividend received if any. Stock prices are important metrics for measuring firm value. Therefore, the value attached to them matters a lot to both existing and prospective investors in the stock market. There are several factors in stock price determination in the stock market, which range from accounting to non-accounting information (Ibrahim & Hussaini, 2015). The commonest way to know is through trading in the secondary market, where investors trade in stocks. That is, the book value of equity constitutes the accounting-based value for owners to judge the true value of equity (Hallefors, 2013). The capital market serves as a place or arrangement where investors and investees interact. The price of shares being sold is determined by the corporate firm characteristics which usually affect the amount of capital a company can raise from the stock market. The stock market provides a link between firms which need to raise funds for business continuity or expansion and those investors who wish to invest their excess resources. Therefore, it is a point for buying and selling of shares, and share prices are determined by demand and supply, which is usually influenced by firm-specific factors and/or macroeconomic variables (Adedoyin, 2011).

The most basic and easiest way to measure firm value is to look at the company's market value. This is also known as the company's market capitalization. Market capitalization is the value arrived at when all the outstanding shares of the company's stock are multiplied by the current price of a single share. The stock exchange is an exceedingly fluid, dynamic and engaging entity which facilitates thousands of transactions that occur simultaneously from traders striving to outbid and outsell each other. New information about company developments and stock

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recommendations are continuously made available while information is released on new and different ways in which the market can be exploited (Safdar et al., 2013).

Prakasita (2019) defined firm value as the perception of the investor about the success of a company which is reflected in the share price of the company. Oktarina (2018) defined firm value as a market value which is closely related to stock prices, and which gives investors an insight into the risks and prospects of the company in the future while Pratiwi et al. (2019) asserted that company value can be interpreted as an assessment conducted by investors on the level of success of the company in managing its resources. Company value can be described as the condition of the company. The higher the value of the company, the more attractive it would be to prospective investors. An increase in share price shows the confidence of the investors in the company. It shows that investors are willing to pay more to obtain a higher return. The firm value reflects the total assets owned. It consists of the market value of shares and liabilities (Damodaran, 2002). A high stock price can provide a good signal to attract investors to determine investment decisions.

This study uses Tobin's Q as the measure for firm value because it is considered the most appropriate measure for firm value and is used in the economic, accounting and finance literature (Fooladi et al., 2013; Utama & Utama, 2014; Wang et al., 2019; Alqatan et al., 2019; Enache & Hussainey, 2019). Tobin's Q measures the relationship of the firm stock market value to the firm's resources replacement cost (Sahay & Pillai, 2009), and is considered the best predictor of market correction (Pett, 2013).

EMPIRICAL REVIEW

Rieg and Vanini (2023) statistically integrated and explained the heterogeneity of results of several studies on intellectual capital disclosure by applying a meta-analysis with 122 effects from 40 primary studies. Their results mainly support the value relevance of voluntary ICD resulting in higher market value, lower cost of equity, and higher accounting performance. We identify weak moderating effects for legal origin, different IC categories and journal ranking.

Luthfiani and Suryani (2022) examined how information created by stakeholders and other parties outside of management may affect a company's reputation. In addition to annual reports, the study also measured intellectual capital disclosure information using new data sources such as social media and online business media. Firm value was measured using price to book value. The study examined the impact of voluntary and involuntary disclosure of intellectual capital on a firm's value. The sample of the study consisted of 32 banks listed on the Indonesia Stock Exchange in 2019. The study employed multiple linear regression analysis to examine the impact of voluntary and involuntary intellectual capital disclosure on firm value. The study results indicated that intellectual capital disclosure affects the firm value.

Putra and Ratnadi (2021) investigated the influence of intellectual capital and intellectual capital disclosure on firm valuation and identified the types of disclosures made by the banks listed on the Indonesia Stock Exchange from 2015 to 2019. The data used in the analysis was secondary data from annual reports. The selection of the research sample was based on the purposive sampling method. The disclosure index was a six-way numerical coding scheme with 36 disclosure objects divided into three categories: structural capital, human capital, and external capital. Content analysis and multiple linear regression were used to analyse the data. Firm value

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was measured by the ratio of the stock price to the company's book value. The results of the analysis showed that an average of 49.91 per cent was disclosed in the form of narrative, 16.44 per cent was in the form of a combination of qualitative and quantitative, 7.53 per cent was in the form of numbers and 1.44 per cent was expressed in the form of monetary units. The study found that an average of 24.33 per cent of items of disclosure were not disclosed. Intellectual capital disclosure was found to have a positive impact on firm value, while intellectual capital had no impact. The previous study covered five years while the current study covers ten years with a higher number of firm-year observations. Issues of external validity arising from differences in the operating environment of the countries of domain also arise as the previous study was based in Indonesia.

Saifi (2021) investigated the direct and indirect effects of Intellectual Capital Disclosure and Capital structure on financial performance and company value. The population of the study was 13 automotive companies listed on the Indonesia Stock Exchange for the period 2016 to 2019. The purposive sampling technique was used. Path analysis was used to analyse the data. Firm Value was measured by two indicators, namely Price Earnings Ratio, and Earnings per Share. The results of this study revealed that Intellectual Capital Disclosure both directly and indirectly through financial performance had significant effects on Firm value. The previous study adopted Price Earnings ratio and Earnings per share as proxies for firm value while the current study adopted Tobin's Q as the proxy for firm value. The previous study focused on the automotive industry in Indonesia while the current study covered the financial services sector in Nigeria, therefore, results may vary due to the peculiarities of the two sectors. Issues of external validity may also arise because of differences in the legal and operating environments of the two countries.

Dewi et al. (2021) evaluated the impact of intellectual capital and intellectual capital disclosure on the value of a company. The research was performed on all financial and telecoms sector firms listed on the Indonesia Stock Exchange from 2014-2019. A nonprobability sampling approach with a purposive sampling methodology was used to determine the sample size. 234 business annual reports were used as examples. Two independent sample averages (t-test) and multiple linear regression were utilised as analytical techniques for the study. The findings revealed that intellectual capital disclosure differed across firms in the finance and telecoms sectors. Companies that can enhance the efficiency of intellectual capital and the disclosure of intellectual capital in the annual report may raise the firm's worth. The previous study was carried out in Indonesia which raises issues of external validity as the current study was carried out in Nigeria. The current study focused solely on the financial services sector while the previous study reviewed both financial services and telecommunications sectors.

Al-Sartawi (2021) examined the relationship between firm value and the level of social media disclosure of intellectual capital by Kuwaiti and Omani listed firms. The level of social media disclosure of intellectual capital was measured by adapting a checklist of 78 items. Also, the financial reports were used to determine Tobin's Q. The results showed that the level of social media disclosure of intellectual capital was 71% by Kuwaiti and Omani firms. Moreover, the findings indicated a significant positive relationship between the firm value and the level of social media disclosure of intellectual capital. The previous study considered only the effect of social media disclosure of intellectual capital on firm value while the current study considered the effect of intellectual capital disclosure on firm value using the annual reports of the financial

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services firms as the main source of extraction of information through content analysis. Issues of external validity may also arise as a result of differences in the operating environment of the two countries.

Salvi et al. (2020) empirically analysed the impact of Intellectual Capital disclosure quality on firm value in the context of integrated reporting. Based on a sample of 110 companies, findings revealed a significantly positive relationship between all components of Intellectual Capital (structural, human, social and relationship) and firm value. The previous study cut across various sectors while the current study focused on the financial services sector. Issues of external validity also arise.

Theoretical Framework

The Resource Based View Theory

The major proponents of the Resource Based View Theory are Wenerfelt, Barney, Prahalad and Hammel. The theory takes an inside-out view or firm-specific perspective on why organizations succeed or fail in the marketplace (Madhani, 2010). According to Barney (1991), resources that are valuable, rare, inimitable and non-substitutable (VRIN), make it possible for businesses to develop and maintain competitive advantage, and to utilize these resources and competitive advantage for superior performance.

The theory emphasizes the analysis and interpretation of the resources of an organization to determine those that will accrue a sustainable competitive advantage to the organization in the formulation of strategies to achieve its goals and objectives which may include value addition to the customer value chain, development of new products and expansion into a new marketplace. The theory stresses that not all the resources of a firm will be sources of competitive advantage since all the resources will not be strategic. Competitive advantage only occurs when resources are heterogeneous and immobile. According to Conner (1991), the performance of organizations varies as a result of their possession of unique inputs and capabilities. Resources that cannot be easily transferred or purchased, that require an extended learning curve or a major change in the organization's climate and culture, are more likely to be unique to the organization and more difficult to imitate by competitors.

A resource's value is confirmed either by its ability to reduce cost (low-cost resources) or to increase the revenue of a firm (differentiated resources). While recognizing that a resource is valuable if it helps the organization to improve its performance relative to their competitors, Barney (1991) categorizes three types of resources namely physical capital resources (physical, technological, plant and equipment), human capital resources (training, experience, insights) and organizational capital resources (formal structure). On the other hand, Brumagin (1994) recognizes four different levels of corporate resources namely production/maintenance resources, administrative resources, organizational learning resources, and strategic vision resources (the most advanced or the highest level).

The Resource Based View theory is relevant for this study because intellectual capital is a proven strategic resource for organizations. According to Brumagin (1994), out of four categories of resources, intellectual capital makes up the organizational learning and strategic vision resources which are considered the most advanced or the highest level of resources, and which is therefore expected to provide a source of sustainable competitive advantage for organizations. It also meets the "VRIN" criteria of resources that provide a competitive advantage because they are valuable, rare, imperfectly imitable and non-substitutable.

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Sudibyo and Basuki (2016) anchored their work on the Resource-Based View theory which posits that a company will have a competitive advantage when it can implement a value-creating strategy ahead of its competitors. Knowledge resources within a company will enable a company to implement an idea ahead of its competitors therefore intellectual capital possesses the attributes of a good resource. Human capital, being one of the most important components of intellectual capital fulfils these attributes.

Methodology

This study adopted the longitudinal research design and positivism as the research philosophy. In a longitudinal study, researchers repeatedly examine the same items or objects to detect any changes that might occur over a period. The population of this study consists of all financial services companies quoted on the Nigerian Exchange Group (NGX) as at 1st January 2021. According to NGX Fact Book (2021), there are fifty-two (52) quoted financial services companies in Nigeria. Given the nature of the model used in the study, filters were employed to arrive at an adjusted population in line with the studies of Kamaruzaman et al. (2019), Dusterhoft et al. (2020), Erin et al. (2020) and Surdu et al. (2020). Firms with the financial and market information necessary to extract the panel data needed for the period 2012-2021 from the annual reports and accounts of the firms and daily lists of the NGX for the study period were sampled for data collection. Furthermore, these companies must have complete information on all content items for all variables to be used for data collection. This brought the number of sampled companies to thirty-seven (37). The linear representation of the model is:

$$\boldsymbol{FV_{it} = \beta_0 + \beta_1 HCD_{it} + \beta_1 RCD_{it} + \beta_1 SCD_{it} + \varepsilon_{it}}$$

Where:

FV = Firm value

HCD = Human capital disclosure

RCD = Relational capital disclosure

SCD = Structural capital disclosure

i = firm

t = time

ε = error term

Measurement of Variables

Variable	**Variable Measurement**	**Source**
Voluntary human capital Disclosure	Human Capital Disclosure Index	Li et al (2008)

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Voluntary relational capital disclosure	Relational Capital Disclosure Index	Li et al. (2008)
Voluntary structural capital disclosure	Structural Capital Disclosure Index	Li et al. (2008)
Firm Value (Tobin's Q)	= Common value of stock + Debt / Total asset	Yang et al. (2020)

Results and Discussion

Table 1: Descriptive Statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
fv	370	.3088051	.4379459	.0000262	3.280621
hcd	370	.3611486	.1872974	.125	.875
rcd	370	.422973	.1436109	.1666667	.8333333
scd	370	.3265203	.1628885	.0625	.8125

Source: Generated from Stata, 2023

The firm value represents the total economic value of a company. The result has it that financial companies had firm value ranges between .0000262 and 3.280621. This indicates that the companies had a higher net worth greater than one. The implication is that the market value of a company is greater than the replacement cost of its assets.

Human capital disclosure (HCD) has a mean of .3611486 which indicates that the average disclosure of a financial company's human capital is 36% while the minimum disclosure is .125. However, the maximum disclosure is .875. This represents 87.5 disclosure of human capital by financial companies in Nigeria.

Also, the result shows the minimum of relational capital disclosure (RCD) as .1666667 and the maximum as .8333333 while the mean of relational capital disclosure is .422973. From the result, it means that on average, financial companies disclose 16% of their relational capital items while on the other hand, they disclose a minimum of 42% and a maximum of 83% of the items.

Furthermore, structural capital disclosure (SCD) has an average mean of .3265203 which represents 33% of the total items that are expected to be disclosed while the maximum and minimum disclosure is.0625 (6.25%) and .8125 (81.25%).

Table 2 Correlation Matrix

	fv	hcd	rcd	scd

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fv	1.0000			
hcd	-0.0542	1.0000		
rcd	-0.1909	0.3213	1.0000	
scd	-0.0756	0.4901	0.4819	1.0000

Source: Generated from Stata, 2023

The relationship between firm value and voluntary intellectual capital disclosure variables is ascertained using the correlation matrix and from the result above, it is evident that Human capital disclosure has a negative correlation with firm value to the extent of 0.0542 while relational capital disclosure is negatively related to firm value to the extent of 0.1909. Furthermore, structural capital has a negative correlation with firm value to the extent of 0.0756.

Table 3: Diagnostics Test

Regression assumptions:	Test:	We seek values
1) no heteroskedasticity problem	Breusch-Pagan test Chi2(1): 2.681 p-value: 0.102	> 0.05
2) no multicollinearity problem	Variance inflation factor scd : 1.56 hcd : 1.33 rcd : 1.32	< 5.00
3) residuals are normally distributed	Shapiro-Wilk W normality test z: -0.065 p-value: 0.526	> 0.01

Source: Generated from Stata, 2023

The result above shows the absence of heteroskedasticity since the Chi2 of 2.681 with a probability value of 0.102 is greater than the t-value of 5%. This indicates homoscedasticity of the residuals and can be said to be desirable.

Also, the result shows that there is no Multicollinearity problem since the mean VIF value of all the variables is less than 10. Collinearity can only exist when the VIF values are above 10 while the Shapiro-Wilk W normality test shows that the variables are normally distributed since the p-value of 0.526 is greater than a 5% significant level.

Table 4 Hausman Specification Result

	Coefficients (b) fixed	(B) random	(b-B) Difference	sqrt(diag(V_b-V_B)) S.E.
hcd	.6703527	.7610156	-.090663	.0155083
rcd	-.0179771	-.1338617	.1158846	.0222042
scd	.2625653	.2480254	.0145399	.0010792

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```
                        b = consistent under Ho and Ha; obtained from xtreg
         B = inconsistent under Ha, efficient under Ho; obtained from xtreg

    Test:  Ho:  difference in coefficients not systematic

                  chi2(3) = (b-B)'[(V_b-V_B)^(-1)](b-B)
                          =       44.21
                Prob>chi2 =      0.0000
```

Source: Generated from Stata, 2023

The Hausman result with a p-value of 0.0000 shows that the fixed effect model is most preferred since the p-value is significant at 5% hence, the testing of the hypotheses is based on the fixed effect model.

Table 5 Regression Result

```
Fixed-effects (within) regression               Number of obs      =       370
Group variable: id                              Number of groups   =        37
R-sq:  within  = 0.6274                         Obs per group: min =        10
       between = 0.5157                                        avg =      10.0
       overall = 0.5829                                        max =        10
                                                F(3,330)           =    527.40
Corr(u_i, Xb)  = 0.1567                         Prob > F           =    0.0000
------------------------------------------------------------------------------
          fv |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
         hcd |   .6703527   .0956288     7.01   0.000     .4822338    .8584715
         rcd |  -.0179771   .0769856    -0.23   0.816    -.1694216    .1334674
         scd |   .2625653   .0210747    12.46   0.000     .2211077    .3040229
       _cons |   .1693569    .033799     5.01   0.000     .1028682    .2358456
-------------+----------------------------------------------------------------
```

Source: Generated from Stata, 2023

The coefficient of determination explained 58% variation in firm value while the remaining variation is explained by other variables not captured in the model and the f-statistics show that the model is fit with less than 5% p-value.

The result shows that human capital disclosure has a positive significant effect on firm value at a 5% significant level hence, based on statistical evidence, an increase in human capital disclosure will increase the firm value of listed financial services companies in Nigeria. According to stakeholders' theory, when a company discloses its human capital management practices, it provides investors with insights into how it is nurturing and developing its workforce. This can enhance investor confidence in the company's long-term sustainability and growth potential.

Relational capital disclosure has a negative but insignificant effect on firm value at a 5% level of confidence hence, based on statistical evidence, relational capital disclosure had not affected the firm value of financial services companies in Nigeria.

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Furthermore, it was evident from the statistical result that structural capital disclosure has a positive significant effect on firm value hence, an increase in structural capital disclosure will increase firm value by a .2625653 coefficient. The theory that supports the positive relationship between structural capital disclosure and firm value is often rooted in the broader framework of the "Resource-Based Theory" or "Resource-Based View (RBV)" of the firm. The RBV suggests that a firm's competitive advantage and value creation are influenced by its unique and valuable resources, capabilities, and intangible assets, including structural capital. Effective structural capital management contributes to streamlined processes, optimized workflows, and efficient resource allocation. When a firm discloses information about its well-structured and optimized systems, it demonstrates its capability to reduce costs, improve productivity, and achieve higher operational efficiency, which positively impacts firm value. By disclosing the unique structural assets that provide the firm with a competitive advantage, the firm signals to stakeholders that it has developed resources that are not easily imitated by competitors. This contributes to the firm's ability to sustain its competitive advantage over the long term, enhancing its overall value.

Conclusion and Recommendations

The study examined the effect of voluntary intellectual capital disclosure on the firm value of listed financial services companies in Nigeria and based on the findings, the study concludes that human capital disclosure and structural capital disclosure have a positive significant effect on firm value while relational capital disclosure has a negative but insignificant effect on firm value of listed financial services companies in Nigeria.

From the conclusion of the study, the following recommendations are provided:

i. Companies should consider incorporating comprehensive human capital disclosure in their annual reports, sustainability reports, and other relevant documents. These disclosures should encompass information on workforce development, training initiatives, diversity and inclusion efforts, employee well-being programs, and retention strategies.
ii. Financial companies should approach relational capital disclosure strategically. They should identify the key relationships and partnerships that contribute significantly to the firm's competitive advantage and value proposition and focus on disclosing information that enhances transparency without compromising sensitive details.

iii. Disclosing structural capital information indicates a commitment to transparency and accountability. This can lead to enhanced stakeholder trust and a positive reputation, which are key drivers of firm value. The firms should disclose structural capital items to improve the company firm value such as capital innovations, the innovation of organizations to create new products and services, and capital processes.

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Appendix

```
Random-effects GLS regression                   Number of obs      =       370
Group variable: id                              Number of groups   =        37
R-sq:  within  = 0.6261                         Obs per group: min =        10
       between = 0.5517                                        avg =      10.0
       overall = 0.5906                                        max =        10
                                                Wald chi2(3)       =   1604.89
```


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```
Corr(u_i, X)   = 0 (assumed)                    Prob > chi2        =    0.0000

------------------------------------------------------------------------------
          fv |      Coef.   Std. Err.      z    P>|z|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
         hcd |   .7610156   .0943629     8.06   0.000     .5760678    .9459635
         rcd |  -.1338617    .073714    -1.82   0.069    -.2783386    .0106152
         scd |   .2480254    .021047    11.78   0.000      .206774    .2892768
       _cons |   .2128312   .0359575     5.92   0.000     .1423558    .2833066
-------------+----------------------------------------------------------------
```

List of Sampled Firms

S/N	**Company**	**Ticker**	**Date Listed**	**Date of Incorporation**
1	Abbey Mortgage Bank Plc	ABBEYBDS	Invalid date	August 26th 1991
2	Access Bank Plc.	ACCESS	Invalid date	February 8th 1989
3	Africa Prudential Plc	AFRIPRUD	November 1st 2013	March 23rd 2006
4	African Alliance Insurance Plc	AFRINSURE	September 17th 2009	May 6th 1960
5	AIICO Insurance Plc.	AIICO	Invalid date	July 14th 1970
6	Axamansard Insurance Plc	MANSARD	November 19th 2009	June 23rd 1989
7	Consolidated Hallmark Insurance Plc	CHIPLC	February 22nd 2008	August 2nd 1991
8	Cornerstone Insurance Plc	CORNERST	Invalid date	July 26th 1991
9	Custodian Investment Plc	CUSTODIAN	Invalid date	August 22nd 1991
10	Ecobank Transnational Incorporated	ETI	September 11th 2006	October 3rd 1985
11	FBN Holdings Plc	FBNH	November 26th 2012	August 13th 2012
12	FCMB Group Plc.	FCMB	June 21st 2013	November 20th 2012
13	Fidelity Bank Plc	FIDELITYBK	May 17th 2005	November 19th 1987
14	Goldlink Insurance Plc	GOLDINSURE	February 12th 2008	September 8th 1993
15	Guaranty Trust Bank Plc.	GUARANTY	Invalid date	July 20th 1990
16	Guinea Insurance Plc.	GUINEAINS	Invalid date	December 3rd 1958
17	Lasaco Assurance Plc.	LASACO	Invalid date	December 20th 1979
18	Law Union and Rock Ins. Plc.	LAWUNION	July 9th 1990	June 17th 1969
19	Linkage Assurance Plc	LINKASSURE	November 18th 2003	March 26th 1991
20	Mutual Benefits Assurance Plc.	MBENEFIT	May 28th 2002	April 18th 1995
21	Nem Insurance Plc	NEM	September 5th 1990	April 2nd 1970
22	Niger Insurance Plc	NIGERINS	Invalid date	August 29th 1962
23	Prestige Assurance Plc	PRESTIGE	December 3rd 1990	January 6th 1970
24	Regency Assurance Plc	REGALINS	Invalid date	June 16th 1993
25	Royal Exchange Plc.	ROYALEX	December 3rd 1990	February 28th 1921
26	Sovereign Trust Insurance Plc	SOVRENINS	November 29th 2006	February 26th 1980
27	Stanbic Ibtc Holdings Plc	STANBIC	November 23rd 2012	March 14th 2012
28	Standard Alliance Insurance Plc	STDINSURE	December 19th 2003	July 28th 1981
29	Sterling Bank Plc.	STERLNBANK	August 17th 1993	November 25th 1960

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30	Union Bank Nig.Plc.	UBN	Invalid date	Invalid date
31	United Bank for Africa Plc	UBA	March 31st 1970	February 23rd 1961
32	Unity Bank Plc	UNITYBNK	Invalid date	April 27th 1987
33	Universal Insurance Plc	UNIVINSURE	November 2nd 2009	March 1st 1961
34	Veritas Kapital Assurance Plc	VERITASKAP	Invalid date	August 8th 1973
35	Wapic Insurance Plc	WAPIC	August 31st 1990	March 14th 1958
36	Wema Bank Plc.	WEMABANK	Invalid date	May 2nd 1945
37	Zenith Bank Plc	ZENITHBANK	October 21st 2004	May 30th 1990

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