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

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Abstract

This study examined the effect of intellectual capital disclosure on the value of listed financial services companies in Nigeria. Specifically, the study assessed the individual effects of human capital disclosure, structural capital disclosure, and relational capital disclosure on the value of listed financial services companies in Nigeria. This study adopted an ex post facto research design. The population of this study consisted of 37 out of 52 financial services companies quoted on the Nigerian Exchange Limited (NGX) as at December 31st, 2023. Data were collected from the published annual financial statements of the sampled companies for a period of ten years (2014-2023). The study used Tobin's Q to measure firm value, while intellectual capital disclosure was proxied using human capital disclosure, structural capital disclosure, and relational capital disclosure. The multiple regression analysis technique was used to test the hypotheses. The result based on the overall explanatory power, revealed that 61.50% of the changes in the value of the financial services companies in Nigeria can be attributed to changes in intellectual capital disclosure. Based on the individual explanatory variables, the result of the random effect model revealed that human capital disclosure has a positive and significant effect while structural capital disclosure has a negative and significant effect. Furthermore, relational capital disclosure has a positive but insignificant effect on the value of quoted financial services companies in Nigeria. The study concluded that intellectual capital disclosure is an important factor needed for improving the value of companies in the financial sector. From the findings and conclusion, the study recommended that increased investments should be made in the three areas of intellectual capital, especially in the aspect of human capital development.

Keywords*:* Intellectual Capital Disclosure, Human Capital Disclosure, Structural Capital Disclosure, Relational Capital Disclosure, Firm Value, Tobin's Q

Introduction

The economy world over, has reached a stage where knowledge, processes, and procedures drive production and economic activities as against the physical and tangible assets. Capital, to the vast majority of people, refers only to the financial and other physical assets of an organisation without considering another vital aspect of the firm's performance and survival. This vital capital of the firm is different from the conventional assets and coordinates, controls, and puts to use other assets of the firm. The relevance of traditional financial accounting information has been diminishing in the last few decades. Its limitations have been brought to the limelight in the wake of the series of scandals and corporate collapses in recent years (Da Costa, 2017). Financial statement information is only relevant if it can confirm or change investors' expectations regarding the value of stock or the value of the firm.

In the modern economic environment, intellectual capital is understood as a non-monetary asset without physical substance but possesses value or can generate future benefits (Choong, 2015). It is also the possession of knowledge and experience, professional knowledge and skill, good relationships, and technological capacities, which when applied will give organisations a competitive advantage (CIMA,

2001). Many practitioners and scholars have identified three basic Intellectual Capital (IC) which are; human capital, structural capital, and relational capital. Human Capital (HC) includes knowledge, skills, and experience owned by the employees of the company. Structural Capital (SC) refers to knowledge attached to the structure and organisation process, including corporate culture, sharing of knowledge, technology, and availability of information systems. Relational or Customer Capital (RC) is a good relation (association network) owned by the company to its stakeholders. The relation here refers to supplier relations, customer loyalty, goodwill, and a good relationship with government and society in general.

Nowadays companies are mainly focusing on intellectual capital due to increasing investor's interest. To win the investor's confidence businesses must possess strong intangible value. On the other side it can be said that intellectual capital can contribute to firm value through share price profitability, return on investment, and return on equity (Ogundajo et al., 2022). Moreover, the impact of corporate governance cannot be neglected in developing countries such as Nigeria where interest alignment issues are higher between managers and shareholders. Gradually the importance of intellectual capital has evolved therefore; it is obvious to analyze the dynamics of intellectual capital and its effects on firm valuation.

Previous studies conducted in this area seem to be inadequate for the fact that they were mostly done on financial performance or profitability of companies (Sundari & Setiany, 2021). Also, in all these studies conducted, a subsector of quoted financial services companies in Nigeria regarded as deposit entities were rarely studied. In the post adoption era of International Financial Reporting Standards (IFRSs) by quoted companies in Nigeria, studies of the influence of intellectual capital on firm value of quoted entities are limited (Ogundajo et al. 2022). This motivates the conduct of the present study. Of all the previous studies conducted to establish the influence of intellectual capital on value of quoted entities especially in Nigeria, there is still considerable argument and inconsistent results. Some of the previous studies claimed that intellectual capital had negative influence on firm value (Yunita & Prastiwi, 2021) while others claimed that intellectual capital had positive and insignificant influence on firm value of entities (Salehi & Zimon, 2021). This calls for the need to empirically address the conflicting issues in the literature in the continuing debate.
Also, the studies reviewed showed that relevant studies on intellectual capital and firm value of entities were conducted in different economy and sectors (Al-Delawi et al. 2022). Many studies were done on deposit money banks, but on the effect of intellectual capital on profitability of firms (Mubaraq & Hajji, 2014). While others focused predominantly on the entire quoted companies (Anifowose et al. 2018) of which findings may not be specific to the financial sector. In the area of intellectual capital and firm value of entities especially the entire financial services companies in Nigeria, limited studies were observed. Also, most of the studies reviewed so far used market price per share (MPS) singularly to measure firm value (Luckieta, 2021). However, the use of market price per share alone may not be a good measure of managerial performance as share prices are mostly distorted by factors outside managerial and firms' control. Consequently, this study measured firm value using estimates from Tobin's Q.

Given the operational problem and gaps identified in the literature, this study aimed at establishing the effect of intellectual capital disclosure on the firm value of listed financial services companies in Nigeria.

The study hypothesized that;

H_{O1}: Human capital disclosure has no significant effect on the firm value of listed financial services firms in Nigeria

H_{O2}: Structural capital disclosure has no significant effect on the firm value of listed financial services firms in Nigeria

H_{O3}: Relational capital disclosure has no significant effect on the firm value of listed financial services firms in Nigeria.

Literature Review

Concept of Intellectual Capital

Intellectual capital is seen as the aggregate of knowledge possessed by an entity from its activities of investment and continuous operation (Nuryaman, 2015). Andreeva and Garanina (2017) opined that an organisation is expected to acquire knowledge in attracting more customers, strengthening the skills of employees and improving upon the internal operation. The drive to operate in accordance with the modern requirements of business is why resources are needed to be invested to improve upon the intellectual capital of organisations. When intellectual capital of an entity is improved, it is expected that potential customers are attracted to the products or services of the company; employees' productivity is improved as well as the approach of handling tax in the organisation. In the opinion of Luckieta (2021), intellectual capital is understood to be an interesting resource in an organisation that could influence several financial performance indices including profitability and value. This is because of the relevance of knowledge in modern business activities as compared with the ancient mode of conducting business. In the recent time, intellectual capital is expected to be improved in an organisation to enable them to meet their expectations, or their strategic objectives drawn from the mission statement.

As the level of intellectual capital is improved in an organisation, it is possible to say that the company must be one that is growing in terms of how the products or services are known in the market, how equipped the employees are in terms of handling tasks and the level of strength possessed by the company in their operating processes. Intellectual capital is an aspect of knowledge-based economy that is highly needed in the modern business practice. For Pasaribu et al. (2012), knowledge possessed by organisations is meant to transform the phase of the organisation as well as expand the scope. This is why intellectual capital is so essential that modern companies ensure that resources are invested to improve on the key variables. Quoted financial services companies in Nigeria are some of those entities that need to improve upon their level of intellectual capital for the purpose of reaping the anticipated benefits accrued. The key factors of intellectual capital are human capital, relational capital and structural capital. For intellectual capital to be improved, the level of these variables must be influenced positively (Luckieta, 2021).

Human Capital

Human capital is defined as the variable of intellectual capital that is associated with the level of skill and knowledge possessed by employees in organisation (Adegbayibi, 2021). The investment of companies in training and development of employees is associated to improving upon human capital which is a variable of intellectual capital. When training and development of employees in organisations is effective, it is expected that human capital is improved and when human capital is raised, several financial performance indicators must be improved (Suhendra, 2015). The strategies of managers to raise human capital in an organsation are always traced to training and development of employees which are meant for the job-related activities and general education. Employees are expected to be equipped for both the job-related tasks and academically sound because modern business activities are volatile where academic achievement is essential. Human capital is calculated as valued added divided by expenditures incurred

on employees or sometimes regarded as human resources costs (Subaida & Mardiati, 2018). Value added is often seen as the difference between output and inputs of an organisation excluding human resource cost (Utami, 2018).

According to Acuña-Opazo & Gonzalez (2019), output in intellectual capital perception is regarded as the total revenue while input is regarded as total costs excluding human resource costs. When value-added is higher and greater than expenditures on training and development of employees, it could be said that human capital is created in such organisation as well as improving intellectual capital. On the other hand, when value-added is less than expenditure incurred on training and development of employees in an organisation, it could be described that human capital is not created from the costs incurred on the training (Hertina et al., 2020). When human capital is not created adequately based on the enormous expenditure committed on training and development of employees, managers could reduce their spending on such training as this does not impact positively on the entire growth of the organization in terms of raising intellectual capital (Nguyen & Doan, 2020).

Structural Capital

Structural capital is a variable of intellectual capital that deals with the internal process of an organisation (Sharma, 2018). The word structure is linked to how an organisation is run internally to achieve its strategic objectives. Structural capital is concerned with the infrastructures or databases used as a supporting mechanism in delivering of tasks effectively and efficiently. It is basically meant to integrate the internal processes of an organisation for the purpose of higher growth attainment (Ismail, 2020). Structural capital is meant to transform the phase of an organisation from the well-known traditional method to the modern method where the use of facilities to enhance tasks in organisations are considered crucial. Structural capital cuts across tangible and intangible assets acquired and accumulated in an organization (Jose & Silva, 2021). The tangible aspects of structural capital are associated with furniture, van and all other equipments used in the conduct of business activities.

On the other hand, the intangible aspects of structural capital is associated with facilities that could not be seen or touched but are utilised in the conduct of business. The innovation strategy and internal process of communication in an organisation are all regarded as the intangible aspect of structural capital. Structural capital is calculated as total revenue minus operating costs or expenses incurred by a company in an accounting period divided by value-added. It is also calculated as outputs minus inputs including human resource costs divided by value-added in an accounting period (Putra & Ratnadi, 2021). Structural capital is expected to influence value of a company when adequate facilities are utilised in an organisation.

Relational Capital

Relational capital is an attribute of intellectual capital that is associated with the level in which an organisation tries to take their products or services to the customers (Utami, 2018). It is associated with all forms of relationship created by the company between customers and other entities for the exchange of products or services. Relational capital is associated with the soundness or relationship maintained by a company with customers and other external entities. in ensuring that relationships are created about the products or services of a company, investment on marketing and distribution is required for a company to embark on (Suherman, 2017). This is because in effective marketing, the products and services of a company is known to the various customers in terms of quality and usage (Natsir & Bangun, 2020). Relational capital is that variable of intellectual capital that presents the products or services of a company to the various customers.

The higher the relational capital of a company, the higher the intellectual capital possessed by such entity. Intellectual capital is calculated as value-added divided by expenditure on marketing and distribution activities of a company. Value-added is the difference between revenue and total costs excluding expenditures on employees (Reschiwati et al., 2020). When value-added is greater than expenditure on marketing and distribution of a company, it could be said that relational capital is created in the company and as such firm value is expected to be improved. On the other hand, when value-added is less than the expenditure on marketing and distribution expenses incurred by a company, it could be described that the relational capital generated from the investment of a company in marketing activities is minimal and as such the costs should be reduced in subsequent accounting period (Gallegos et al., 2021).

Control Variables

Aside from the variables of intellectual capital, there are critically other factors both internal and external that could influence firm value either positively or negatively (Natsir & Bangun, 2020). These attributes include firm size and leverage.

Firm Size

Company size is regarded as size of asset or revenue accumulated or generated by a company. As the size of a company increases, firm value could be affected either positively or negatively depending on the composition of the size (Yunita & Prastiwi, 2021). Company size is usually measured by taking the logarithm of total assets or revenue (Kurniawan & Muharam, 2021).

Leverage

Leverage is defined as the liabilities or debts used in financing total assets of a company (Sundari & Setiany, 2021). It is also regarded as the composition of debt and equity in the capital structure of a company (Pratama et al., 2021). When total debt of a company is higher than equity or the opposite, there is usually an implication on firm value. Financial leverage is measured by accounting rations such as debt ratios, debt-to-equity ratio and long-term debt ratio. Liquidity of a company is defined as the short-term solvency of a company which is described as the difference between total current assets and current liabilities in an accounting period (Martins & Lopes, 2016).

Firm Value

Firm value is described as the perception of investors towards companies in terms of stock price, assets accumulated, profitability, market value of equity or market capitalization (Suherman, 2017). It is an essential concept in the literature of accounting and finance because it describes the worth of a company in the markets or in terms of the indicators reported in financial statements (Ahmed et al., 2019). The critical aspect of book value is the worth of an entity in the markets. Based on this definition, it could be viewed that firm value is broadly classified into book value performance and market value performance. Book value performance indicators are those accounting variables that support the creation of shareholders' wealth (Salehi & Zimon, 2021). They are often reported on the financial statements of entities which include profits, assets and total equity.

The market value performance indicators are those variables that define the growth of an entity in terms of the price of shares, market value of equity or market capitalization which support the maximization objectives of shareholders' wealth (Sardo & Serrasqueiro, 2017). According to Lusy et al. (2020), the market value performance indicators are usually considered when talking about firm vale because they

are not affected by unrealistic nature of financial statements. When firm value is viewed based on market perception, it means that the indicators are influenced by attributes reported on financial statements such as size of assets, capital structure, the level of sales revenue, liquidity, profitability and the total knowledge or intellectual capital possessed by the company.

Firm value could be measured by market price to book value ratio, market value of equity, market capitalization and the model of Tobin's Q (Suherman, 2017). The magnitude of firm value depends on the method used in its computation and in this case, it could be viewed that empirical studies are affected by the indicators of firm value. The model of Tobin's Q has been considered as an important method of computing firm value because it includes both variables of market value and that of the book value because of inadequate market performance data. It is computed as the aggregate market value of equity and book value of debt divided by total assets of entities (Salehi & Zimon, 2021). In this study, Tobin's Q model is used as a proxy of firm value.

Empirical Review

Ogundajo et al. (2022) examined the relationship between human resource accounting disclosure and the value of a firm. This study used the ex post facto research design by relying on already existing data to investigate the variables. This study obtained data from the annual reports and accounts of the selected firms; downloaded from the official websites of the firms and on the Nigerian Exchange group website. The time frame of the study was ten (10) years between 2011 and 2020. In addition, a co-integration test was carried out to determine the perceived and predicted value of the variables in addition to discovering the correlation between the variables. The analysis of the data revealed that the disclosure of employee training and development significantly impacted on firm value. In essence, this study concludes that there is a significant impact of human resource accounting disclosure on a firm's value. Data from selected firms cannot be used for effective decision from the context of the financial services sector. Hence, the need for a current study that captures data from the financial services sector.

Al-Delawi et al. (2022) aimed to look into the impact of human capital on a company's value. Using a purposive sampling method, both market capitalization and total assets were used to determine the value of the company; 40 companies from the Iraqi Stock Exchange were chosen for research in 2018. The study used a multiple regression model. Employee compensation has no significant impact on market capitalization, according to the findings of this study, whereas employee care and training expenses and profits have a positive and significant impact on market capitalization. Employee compensation has a significant and negative effect on total assets, according to the study, whereas employee care and training expenses and post-tax profits have a moral and positive effect on total assets. This study was conducted on the Iraq Stock Exchange which has a different composition than that of Nigeria; as a result, the findings cannot be applied in the Nigeria context due to problems of external validity.

Luckieta (2021) examined the impact of intellectual capital and firm size on company value of real estate and property sectors of Indonesian Stock Exchange. The period of the study was between 2018 and 2019. The sample size of the study was made up of thirty-eight (38) companies listed in Indonesian Stock exchange (IDX). Relevant data were collected from the published annual reports and financial statements of the firms. From the analysis, it was observed that intellectual capital proxy by Value Added Intellectual Capital (VAIC) had positive and significant impact on the value of Company proxy by return on equity. It was also found that firm size had a negative but insignificant impact on the value of company. Hence, intellectual capital and firm size had positive and significant impact on company value. This study was

conducted in a different economy with different requirements for company regulation and as such its finding cannot be applicable in the Nigeria context.

Sundari and Setiany (2021) examined the influence of intellectual capital and environmental disclosure on firm value. The intention of the researchers was to empirically investigate the influence of intellectual capital and environmental disclosure on firm value of companies studied. Fifty-four (54) entities were drawn and sampled for the study. The key variables used in the study were human capital (HC), structural capital (SC) and relational capital (RC). Firm value was measured by Tobin's Q. Panel data were collected from the published annual reports and financial statements of the sampled entities from the period of 2017 to 2019. The relevant data sourced were analysed using descriptive statistics and regression analytical tool. The outcomes of the analyses showed that components of intellectual such as HC, SC and RC exerted material influence on firm value. The period covered in this study was relatively short to conclude on an informed extent of relationship that may exist between these variables. Thus, the current study took and estimation of ten years.

Theoretical Framework

Stakeholder Theory

The stakeholder theory was propounded by Edward Freeman in 1984. This theory maintains the relationships between stakeholders, including various forms of relationships between the company and all its stakeholders. The stakeholder's theory emphasizes the interconnectedness of a firm with various stakeholders and the need for a more inclusive approach to value creation.

In the context of explaining the relationship between Value Added Intellectual Capital (VAIC) and the company's financial performance, growth, and market value, stakeholder theory has been studied from both the ethics (ethics) and management fields. The prosperity of the company depends on the support of stakeholders. Stakeholders are defined as parties or groups that have direct or indirect interests in the existence or activities of the company. Therefore, this group influences and is influenced by the company (Ayudia, 2017).

Stakeholder theory was derived from a combination of the sociological and organizational disciplines (Wheeler, Colbert & Freeman, 2003). Stakeholder theory asserts that companies have a social responsibility that requires them to consider the interests of all parties affected by their actions. This confers more responsibility on the managers in terms of ensuring that no stakeholder is dissatisfied either in the short or long run. Stakeholder theory is the doctrine that businesses should be run not for the financial benefit of their owners, but for the benefit of all stakeholders (Branco & Lucia, 2007). The advocate of this theory suggested the need for firms to consider not only the community but multiple stakeholders' groups in their decisions and actions. Stakeholders Theory has indeed become one of the most important and frequently cited theories in Corporate Social Responsibility (CSR) research. According to this theory, paying attention to the interest of all stakeholders in a business is a useful way of developing socially responsible behavior by managers and that a socially responsible organization is one in which obligations to stakeholders' figure prominently in the decision-making of its managers (Clarkson, 1995).

According to Freeman et al. (2007), external stakeholders are defined as "any group or individual (in the company's environment) who can affect or are affected by the achievement of the firm's objectives", and he suggests that there is a need for integrated approaches for dealing with multiple stakeholders on

multiple issues. Therefore, it is clear that the stakeholder theory provides an explanation or incentive for companies to issue an intellectual capital report**.**

The stakeholder theory is relevant to this study because if adequate information about the company is made available to stakeholders, such an action would increase the confidence of stakeholders and reduce the risk factor for the investors. Organizations should therefore voluntarily provide adequate and sufficient information which is vital for the sustainable success of the organization and various significant stakeholders including investors, lenders, employees and their representatives, regulatory agencies and non-governmental organizations demand for such information.

Hafez (2016) also confirmed the applicability of the stakeholder theory in explaining the disclosure of corporate social responsibility activities. They cited Freeman, (1984) who asserted that the management of the organization should give some attention to the stakeholder needs such as employees, suppliers, customers and those who use the firm's goods or services. The firm could satisfy its stakeholder's needs by applying corporate social responsibility activities and this will be beneficial to the organization. If the managers do not pay attention to the needs of stakeholders the stakeholders may withdraw their support for the organization. For example, customers may stop purchasing the goods or services of the company and the investors may deviate from buying the stocks of the company and as a result of that the organizational financial performance will be affected.

The stakeholder theory is relevant to this study because it can be applied in the explanation of the reasons why firms voluntarily disclose intellectual capital information in annual reports.

Methodology

This study adopted ex post facto research design. This study uses secondary sources of data. The data was extracted from the Audited Annual Reports and Accounts of the selected financial services firms from 2014-2023. The population of this study will consist of all financial services companies quoted on the Nigerian Exchange Limited (NGX). According to NXG Fact Book (2024), there are fifty-two (52) quoted financial services companies in Nigeria. The companies sampled are considered to have available and accessible annual reports that cover the study timeframe. This brought the number of sampled companies to thirty-seven (37). This study used the multiple regression analysis techniques to test the hypotheses using STATA as a tool of data analysis. The following diagnostic tests were conducted in order to improve the validity of all the statistical tools; multicollinearity, heteroskedasticity and Hausman Specification tests.

The econometric model was adopted from the study of Ahmed et al. (2019) and modified to suit the specifics of the current study as follows:

$FV_{it}=\beta 0+\beta_1 HC_{it}+\beta_2 SC_{it}+\beta_3 RC_{it}+\beta_4 FS_{it}+\beta_5 LEV_{it}. + \varepsilon it$ ……. (1)

Where: FV= Firm Value, β0 = Intercept Point (constant term), β1 – β5 = Respective Coefficients of the Independent and Control Variables., HC = Human Capital, SC= Structural Capital,
RC= Relational Capital. FS=Firm Size, LEV=Leverage, ε_{it} = Error term

Decision Rules

The decision rule to test the hypothesis of the study is as follows: If the prob-value of the t-coefficient is less than 5% (0.05), the null hypothesis is rejected, otherwise, it is accepted.

Table 1:Measurement of Variables

S/N	Variable	Variable Type	Measurement	Source
1	Firm Value (FV)	Dependent	Tobin's Q=(MVE+BVD)/TA) MVE = Market Value of Equity, BVD = Book Value of Debt, TA = Total Asset.	Nguyen and Doan (2020); Putra and Ratnadi (2021).
2	Human Capital (HC)	Independent	Measured using Value-Added = Revenue-Total Costs + Employees' Expenditure,	Jose and Silva, (2021); Nguyen and Doan (2020);
3	Structural Capital (SC)	”	(Value Added- Employees' Expenditures)/ Value Added	Jose and Silva (2021); Nguyen and Doan (2020);
4	Relational Capital(RC)	”	Value Added/Marketing and Distribution Expenses	Jose and Silva (2021); Nguyen and Doan (2020);
5	Firm Size	Control	Natural Log of Total Assets	Al-Delawi et al. (2022); Putra and Ratnadi (2021
6	Leverage	Control	Debts/Equity	Nguyen and Doan (2020); Jose and Silva (2021)

Source: Researcher's Compilation, 2024

Results and Discussions

Table 2: Descriptive Statistics

Variables	Obs	Mean	Std. Dev.	Min	Max	Skewness	Kurtosis
FV	370	.47735	.1835151	.112639	.784016	-.2697519	1.905588
HC	370	.1635894	.141351	.012548	.68286	1.553781	4.972157
SC	370	.47735	.1835151	.112639	.784016	-.2697519	1.905588
RC	370	.3883574	.091601	.117356	.630627	-.0805322	2.844895
FS	370	6.994208	.702508	4.30743	8.99424	.5019652	3.833674
LEV	370	.4254117	.2198814	.008674	.897729	.362284	2.130247

Source: STATA 17 Output, 2024

The descriptive statistics in Table 2 above indicates that the average firm value, measured by Tobin's Q, is 0.47735 with a standard deviation of 0.1835151. This suggests a relatively low ratio of the financial firms' market value to their book value. The minimum and maximum values, 0.112639 and 0.784016,

respectively, highlight a significant degree of variability in the data. The skewness of -0.2697519 indicates a slight left skew in the distribution, meaning a few larger values are present. The kurtosis value of 1.905588, which is slightly lower than 3, suggests a relatively flatter distribution compared to a normal distribution.

For the independent variables, human capital disclosure has a mean value of 0.1635894 with a standard deviation of 0.141351, indicating significant variation in human capital disclosure across the sampled financial firms. The minimum value of 0.012548 and maximum of 0.68286 further highlight the inconsistency in the data. The skewness value of 1.553781 suggests a strong right skew, meaning that a few firms have much higher levels of human capital disclosure. The kurtosis value of 4.972157 indicates a distribution that is more peaked than normal, suggesting the presence of outliers.

In addition, structural capital disclosure has an average value of 0.47735 with a standard deviation of 0.1835151, indicating that, on average, 47.7% of structural capital disclosures are made within the sampled financial firms. This relatively close relationship between the mean and standard deviation suggests moderate variability. The minimum and maximum values of 0.112639 and 0.784016 further reflect the level of dispersion in structural capital disclosure among the firms studied. The skewness value of -0.27 indicates a slight negative skew, similar to the distribution of firm value, while the kurtosis of 1.91 suggests a slightly platykurtic distribution, meaning there are fewer extreme values compared to a normal distribution.

Furthermore, the descriptive statistics in Table 2 showed an average relational capital disclosure of 0.3883574 with a standard deviation of 0.091601, and a range of values from 0.117356 to 0.630627. The considerable difference between the minimum and maximum values indicates a high level of variability in relational capital disclosure among the financial services firms. This suggests that some firms disclose significantly more about their relational capital than others.

The average firm size as indicated by Table 2 is 6.994208. The standard deviation is .702508 indicating a low variability among the variables. It means that most of the financial companies are within the same range in terms of their total asset. The minimum and the maximum firm size are 4.30743and 8.99424 respectively. This implies that the range is not wide indicating how range in total asset owned by the firms is closely related.

Table 2 further shows that the mean for leverage is .4254117 indicating the average level of leverage across the sampled financial firms and the standard deviation of leverage is .2198814. The difference between the mean and the standard deviation is .2198814. This is an indication of large variations in the leverage ratio around the mean. It means that there is a very low variation in the debt capitalization status of the sampled companies. The minimum and maximum are .008674 and .897729 respectively. Similarly, the coefficient of Kurtosis .362284 also indicates that the variable does not meet the Gausian distribution assumption of normal data.

Table 3: Correlation Matrix

	FV	HC	SC	RC	FS	LEV
FV	1.0000					
HC	0.1852	1.0000				
SC	-0.0309	-0.0788	1.0000			
RC	0.1148	0.1583	0.0059	1.0000		
FS	0.0063	-0.0415	0.0299	0.0443	1.0000	
LEV	0.1590	0.1124	-0.0634	0.0336	-0.1070	1.0000

Source: STATA 17 Output, 2024

Table 3 presents the correlation between the dependent variable (firm value) and the independent variables (human capital disclosure, structural capital disclosure, relational capital disclosure), as well as the control variables (firm size and leverage). It also shows the correlation among the independent variables. All correlation coefficients among the independent variables moved in the same direction (positive) and are below 0.80 (80%), indicating the absence of multicollinearity, as suggested by Gujarati (2004).

Post Residual Diagnostic Tests

Table 4: Multicollinearity Test

Variable	VIF	1/VIF
HC	1.05	0.956851
RC	1.03	0.971563
LEV	1.03	0.973682
FS	1.02	0.984444
SC	1.01	0.989998
MEAN VIF	**1.03**	

Source: STATA 17 Output, 2024

The evidence in Table 4 suggests that there is no multicollinearity problem. This is supported by the fact that the mean VIF values for all models are less than 10, and the tolerance values for all variables are greater than 0.10, as outlined by Gujarati (2004). Baltagi (2015) further supports this, noting that a mean VIF below 10 and tolerance values greater than 10% indicate the absence of multicollinearity. This means the variables are not excessively correlated, ensuring the reliability of the model's estimates.

Table 5: Test for Heteroskedasticity

Heteroskedasticity	Chi2	Prob>Chi2
		0.8954
Variables	0.02	

Source: STATA 17 Output, 2024

The presence of heteroskedasticity indicates that the variation of the residuals or error term is not constant, which could impact the accuracy of inferences regarding the beta coefficients, the coefficient of determination (R^2), and the F-statistic in a study. However, based on the results, it can be concluded that there is no issue of heteroskedasticity, as the F-statistic value of 0.02 and the probability value of 0.8954 are insignificant. This implies the absence of heteroskedasticity in the model, ensuring the reliability of the estimates.

Table 6: Hausman Specification Test

Variable	(b) fe	(B) Re	(b-B) Difference	Sqrt (diag (V_b-V_B)) S.E.
HC	.2129014	.2028094	.010092	.0134558
SC	-.0096943	-.010957	.0012626	.008457
RC	.1756703	.1689645	.0067058	.0216883
FS	.0059863	.0063748	-.0003886	.0020597
LEV	.1229324	.1172918	.0056406	.0102667

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(5) = (b-B)'[(V_b-V_B)^(-1)](b-B) = 0.98

Prob>chi2 = 0.9641

Source: STATA 17 Output, 2024

The Hausman Specification Test is used to determine whether the fixed or random effect model is more suitable for interpretation. The test results on table 6 above showed a chi-squared value of 0.98 with a probability of 0.9641. Since this value is insignificant, it indicates that the random effect model is more appropriate (best fit). Based on this outcome, the Lagrangian Multiplier test is recommended for further analysis.

Table 7: Breusch and Pagan Lagrangian Multiplier Test for Random Effects

Variable	Var	sd = sqrt (Var)
FV	.0336778	.1835151
E	.032641	.1806683
U	.0056665	.0416383
Test : (u) = 0, chibar2(01) =	347.32, Prob > chibar2 =	0.0000

Source: STATA 17 Output, 2024

The results show a prob > chi2 value of 0.0000. Based on this, the random effect regression model is more appropriate for interpretation, as the prob > chi2 is less than 0.05. The general rule is that when the probability of the LM test is 0.05 or below, the random effect model is preferred. If the probability were higher than 0.05, the pooled OLS model would be more suitable.

Table 8: Random Effect Regression Result

FV	Coef.	Std. Err.	T	P>|z|
HC	.2028094	.067395	3.01	0.003
SC	-.010957	.051034	-2.21	0.030
RC	.1689645	.1032079	1.64	0.102
FS	.0063748	.0133691	0.48	0.633
LEV	.1172918	.0429488	2.73	0.006
_cons	.2893	.1061072	2.73	0.006
R-squared	0.6150			
Wald chi2(5)	23.83			
Prob > chi2	0.0002			

Source: STATA 17 Output, 2024

From table 8 above, the estimated relationship between the dependent variable and the estimator variables as used in the model is:

FV_{it}=.2893+.2028094HC_{it} -.010957SC_{it}+.1689645RC_{it}+.0063748FS_{it}+.1172918LEV_{it}. + εit

The regression results show an overall R^2 of 0.6150, indicating that the intellectual capital disclosure indices collectively account for approximately 62% of the variation in the firm value of listed financial firms in Nigeria, with the remaining 38% explained by factors outside the model. Additionally, the Wald

chi-squared value of 23.83 with a p-value of 0.0002 confirms the model's goodness of fit. This provides strong evidence that the selected variables are appropriate for the study.

Discussion of Findings

Test of Hypotheses

HO1: Human capital disclosure has no significant effect on the firm value of listed financial services firms in Nigeria

Table 8 indicates that human capital disclosure significantly and positively impacts the firm value of financial firms in Nigeria, as evidenced by a coefficient of 0.2028094 and a p-value of 0.003, which is statistically significant at the 95% confidence level. This result implies that a 1% increase in human capital disclosure is associated with a 20% increase in firm value, assuming other factors remain constant. This highlights the importance of intellectual capital, particularly human capital, in determining firm value. Human capital encompasses employees' knowledge, skills, experience, and innovative capabilities, which are vital assets for financial service companies. Firms that provide greater transparency about their human capital are likely viewed as more trustworthy and better positioned for long-term growth and value creation. Consequently, the study rejects the notion that human capital disclosure does not significantly affect the firm value of listed financial services firms in Nigeria. These findings support the Resource-Based Theory, which asserts that organizations can achieve their goals and objectives when adequate resources are available, as noted by Xu & Liu (2020). Additionally, the significant results align with those of Ogundajo et al. (2022) and Al-Delawi et al. (2022).

HO2: Structural capital disclosure has no significant effect on the firm value of listed financial services firms in Nigeria

Moreover, the study found that structural capital disclosure has a negative and significant impact on the value of financial services firms in Nigeria. This is indicated by a coefficient of -0.010957 and a p-value of 0.030, which is significant at the 95% confidence level. This result suggests that a 1% increase in structural capital disclosure leads to a 1.1% decrease in firm value, as measured by the Tobin's Q ratio, while holding other variables constant. Given the p-value is less than 0.05, the study rejects the hypothesis that structural capital disclosure does not significantly affect the firm value of listed financial services firms in Nigeria. Additionally, the findings imply that increased disclosure of structural capital may actually diminish firm value. Structural capital encompasses non-human elements such as processes, patents, databases, and organizational routines.

HO3: Relational capital disclosure has no significant effect on the firm value of listed financial services firms in Nigeria

Additionally, the regression results presented in Table 8 indicate that relational capital disclosure has a coefficient of 0.1689645, a t-value of 1.64, and a p-value of 0.102. This implies a positive and insignificant relationship between relational capital disclosure and the value of listed financial services firms in Nigeria. Specifically, a unit increase in relational capital disclosure is associated with a 17% increase in firm value, assuming other variables remain constant. However, because the p-value is greater than 0.05, the study supports the conclusion that relational capital disclosure does not have a significant effect on the value of these firms. Moreover, relational capital pertains to the relationships a firm maintains with external stakeholders, such as customers, suppliers, and partners. The lack of significance may indicate that stakeholders do not perceive relational capital disclosures as a critical factor influencing firm value, or that these disclosures fail to accurately reflect the true strength of the relationships. The control variable Firm size has a positive but non-significant effect on the firm value of the listed financial services firm with the coefficient (0.00637) and p-value of 0.633 which suggests that firm size has little direct effect on

firm value in this context. This could indicate that for financial services firms in Nigeria, larger size does not necessarily equate to higher value. It may be that other factors, such as the firm's strategy, market position, or efficiency, play more important roles in determining value.

The second control variable financial leverage has a positive and significant effect on firm value of the listed financial services firms in Nigeria, with the coefficient value of (0.11729) and the p-value of 0.006 indicates that higher leverage is associated with an increase in firm value. This could be because financial leverage, when managed appropriately, enables firms to increase returns to shareholders by using borrowed funds to invest in value-generating activities. However, excessive leverage could also pose risks, so this result suggests that in the sample studied, leverage is seen as a beneficial factor.

Conclusion and Recommendations

Conclusion

This study examined the effect of intellectual capital disclosure on the value of listed financial services firms in Nigeria. From the findings, the following conclusions were made;

The study concluded that human capital disclosure significantly and positively impacts on the value of financial services firms in Nigeria. Particularly the study concluded that human capital is a determinant of the firm value. Human capital encompasses employees' knowledge, skills, experience, and innovative capabilities, which are vital assets for financial service companies. Firms that provide greater transparency about their human capital are likely viewed as more trustworthy and better positioned for long-term growth and value creation.

Furthermore, the study found that structural capital disclosure has a negative and significant impact on the value of financial services firms in Nigeria. Additionally, it was concluded that increased disclosure of structural capital may actually diminish firm value. Structural capital encompasses non-human elements such as processes, patents, databases, and organizational routines.

Moreover, relational capital pertains to the relationships a firm maintains with external stakeholders, such as customers, suppliers, and partners. The lack of significance may indicate that stakeholders do not perceive relational capital disclosures as a critical factor influencing firm value, or that these disclosures fail to accurately reflect the true strength of the relationships.

Recommendations

From the findings and conclusion, the following recommendations were made;

i. Financial services firms should enhance transparency of human capital disclosures by publishing annual reports that provide specific metrics on employee training programs, skill development initiatives, and certifications.
ii. Financial services firms should develop clear metrics or benchmarks on their proprietary technologies, or organizational processes that demonstrate the impact of structural capital on operational efficiency and long-term sustainability, and communicate these through both quantitative and qualitative disclosures.
iii. Financial services firms should strengthen relational capital disclosures by reporting detailed information on long-term partnerships, joint ventures, and customer loyalty programs, illustrating how these relationships contribute to revenue generation and operational success.

References:

Acuña-Opazo, C., & Gonzalez, O. C. (2019). The impacts of intellectual capital on financial performance and value-added of the production evidence from Chile. *Journal of Economics, Finance and Administrative Science*, 1(1), 1-16.

Adegbayibi, A. T. (2021). Intellectual capital and firms' performance measures of listed non-financial companies in Nigeria. *Journal of Accounting and Management*, 11(2), 161-175.

Ahmed, A., Khurshid, M. K., & Yousaf, M. U. (2019). Impact of intellectual capital on firm value: The moderating role of managerial ownership. *Article*, 1(1), 1-15.

Al-Delawi, A., S., Raewf, M. B., & Jameel, A., S. (2022). Voluntary disclosure of human capital and its impact on the market value of companies. *Journal of Intercultural Communication*, 22(2), 24-32. doi.org/10.36923/jicc.v23i 1.53

Andreeva, T., & Garanina, T. (2017). Intellectual capital and its impact on the financial performance of Russian manufacturing companies. *Foresight and STI Governance*, 1(1), 31-40.

Anifowose, M., Mahmud, I., & Mohammed, J. (2018). Intellectual capital efficiency and corporate book value; evidence from the Nigerian economy. *Journal of International Business Research*, 5 (1), 216-225.

Barney, J. B. (1991). Firm resources and sustained competitive advantage. *Journal of Management*, 17, 99-120.

Choong, N. A. (2015). Human capital and poverty in Pakistan: evidence from the Punjab Province. *European Journal of Science and Public Policy* 11: 36–41.

Chattered Institute of Management Accountants (2001)

Da Costa, M.A. (2017). Norm-based behavior and corporate malpractice. *Journal of Economic Issues.* 10(1), 221-241

Gallegos, J. A., Díaz-Contreras, C., Vega-Vargas, J., Arellano-Prada, R.,. & Blas-Yucra, M. (2021). The impact of intellectual capital on financial performance in Argentina, Chile and Peru. *African Journal of Business Management*,15 (9), 242-249.

Hertina, D., Mayasari, L. L., & Sulandari, F. R. (2020). Firm value impact of intellectual capital, company size, profitability, capital structure and asset structure. *Palarch's Journal of Archaeology of Egypt/Egyptology*, 17(10), 3561-3574.

Ismail, M. A. (2020). Effect of intellectual capital on firm value and financial performance: An empirical study on companies listed on Egyptian stock exchange. *Alexandria Journal of Accounting Research*, 4(3), 1-36.

Jose, F. C., & Silva, M. P. (2021). Value added by intellectual capital: A study from the Brazilian B3´s ISE portfolio – Corporate Sustainability Index. *Gestão and Produção*, 28(2), 1-33.

Kurniawan, R. I., & Muharam, H. (2021). The effect of intellectual capital on profitability with firm size as moderating variable (empirical research on state-owned enterprise in Indonesia 2012- 2020). *International Journal of Multidisciplinary and Current Educational Research*, 3(3), 263-267.

Luckieta, M. (2021). Company value measurement through intellectual capital and firm size. *Proceedings of the 11th Annual International Conference on Industrial Engineering and Operations Management Singapore*, 1721-1728.

Lusy, I., Budiyanto, B., & Riduwan, A. (2020). Financial performance and value of SOEs: Seen from good corporate governance, intellectual capital, and corporate social responsibility. *International Journal of Economics and Management Studies*, 7(1), 9-17.

Martins, M. M. & Lopes, I. T. (2016). Intellectual capital and profitability: A firm value approach in the European companies. *Business: Theory and Practice*, 17(3), 234-242.

Natsir, K., & Bangun, N. (2020). The role of intellectual capital in increasing company value with profitability as an intervening variable. *Advances in Economics, Business and Management Research*, 174(1), 101-110.

Nguyen, A. H. & Doan, D. T. (2020). The impact of intellectual capital on firm value: Empirical evidence from Vietnam. *International Journal of Financial Research*, 11(4), 74-85.

Nuryaman, A. (2015). The influence of intellectual capital on the firm's value with the financial performance as intervening variable. *Procedia - Social and Behavioural Sciences*, 211(1), 292-298.

Ogundajo, O M., Omoye, A. S., & Aronmwan, P. O. (2022). The relationship between human resource accounting disclosure and the value of a firm. *International Journal of Finance & Banking Studies*, *10*(3), 86–95.

Pasaribu, H., Purnamasari, D. I., & Hapsari, I. T. (2012). The role of corporate intellectual capital. *American International Journal of Contemporary Research*, 2(9), 162-170.

Pratama, B. C., Setyadi, E. J., & Innayah, M. N. (2021). Intellectual capital and firm financial performance in Asian: The role of dynamic capability. *International Journal of Academic Research in Accounting Finance and Management Sciences*, 11(3), 256-270.

Putra, N. W. S., & Ratnadi, N. M. D. (2021). Intellectual capital and its disclosure on firm value: evidence of Indonesian banking industries. *International Journal of Finance and Banking Studies*, 1(1), 86-95.

Reschiwati, R., Syahdina, A., & Handayani, S. (2020). Effect of liquidity, profitability, and size of companies on firm value. *Utopía y Praxis Latino Americana*, 25(6), 325-331.

Salehi, M., & Zimon, G. (2021). The effect of intellectual capital and board characteristics on value creation and growth. *Sustainability*, 13(1), 1-16.

Sardo, F., & Serrasqueiro, Z. (2017) A European empirical study of the relationship between firms' intellectual capital, financial performance and market value. *Journal of Intellectual Capital*, 18(4), 771-788.

Sharma, P. (2018). Intellectual capital and firm value: A literature review. *Journal of Business and Management*, 20(2), 1-8.

Subaida, I., & Mardiati, N. E. (2018). Effect of intellectual capital and intellectual capital disclosure on firm value. *Journal of Applied Management*, 16(1), 125-135.

Suhendra, E. S. (2015). The influence of intellectual capital on firm value towards manufacturing performance in Indonesia. *International Conference on Eurasian Economies*, 54-61.

Suherman, R. (2017). The impact of intellectual capital toward firm's profitability and market value of retail companies listed in Indonesia stock exchange(IDX) from 2013-2016. *iBuss Management*, 5(1), 98-112.

Sundari, N., & Setiany, E. (2021). The influence of intellectual capital and environmental disclosure on firm value. *International Journal of Management Studies and Social Science Research*, 3(5), 151-162.

Utami, E. M. (2018). The intellectual capital components on firm value: evidence from LQ-45 Index Companies. *Journal Keuangan dan Perbankan*, 22(2), 291-300.

Xu, J., & Liu, F. (2020). The impact of intellectual capital on firm performance: a modified and extended VAIC model. *Journal of Competitiveness*, 12(1), 161-176.

Yunita, W., & Prastiwi, D. (2021). Effect of intellectual capital on firm value. *International Journal of Economics, Business and Management Research*, 5(6), 1-12.