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# The effect of Intellectual Capital Disclosure on the Market Value of Listed Companies in Nigeria

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## Abstract

This research examines the intellectual capital (IC) disclosure effect on the market value of the companies listed on the Nigerian Stock Exchange mainboard. The hypothesis for the study is formulated using the signalling theory. Using content analysis of sampled 30 most capitalised companies, the study generates IC disclosure scores from annual reports. IC is surrogated with customer capital, protected capital, human capital, innovation capital and process capital. At the same time, corporate market value is proxied with a market capitalization in the study. Using the ordinary least square method, this study longitudinally examined the connection between market capitalization and IC disclosure quality using data between the 2016 and 2018 financial years. The result shows that the listed companies' corporate market value and the overall IC disclosure are significantly and positively correlated. The study recommends that managers disclose adequate information on IC because it influences investors decisions and activities at the capital market.

**Keywords:** Voluntary disclosure, intellectual capital, corporate market value, Nigeria

## 1. INTRODUCTION

Science and technology have brought some innovation into organization processes, which have changed their procedures due to intangible assets embedded in IC characteristics. Efficiency utilization and subsequent disclosure of IC information in companies' annual reports have become a common research area globally among academia and practitioners in the field of accounting (e.g., Mangena, Pike, & Li, 2010; Mouritsen, Bukh, & Marr, 2004; Orens, Aerts, & Lybaert, 2009). The importance of IC, which fails to meet the recognition yardsticks of international accounting frameworks and standards (M'Pherson & Pike, 2001), cannot be overemphasized because its non-inclusion in mainstream financial statements as either asset or capital has led to huge differences between book value and corporate market (e.g., Stewart, 1991; Public, 2000).

Further, scholars such as Bounfour (2003), Bontis (1996), Edvinsson and Malone (1997) have identified relational capital, structural capital, and human capital as the three components of IC. Relational capital refers to an organization's internal and external social relationships, an intangible asset. Structural capital covers the methods, processes, structure of the intellectual property, brands, and other essential things that the company possesses but do not reflect its financial statement (Bounfour, 2003; Bontis, 1996; Stewart, 1997). Included in human capital, according to Edvinsson and Malone (1997); Roos, Roos, Dragonetti, and Edvinsson (1997) and Stewart (1997), are the intellectual abilities, skills, experience, and competence of each employee.

Although one can easily understand relational and human capital constituents, structural capital elements are ambiguous. After critically examining the extant literature on structural capital and the Nigerian economic environment, this paper divides structural capital into three components: process capital (Hsu & Fang, 2009; Stewart, 1997), protected capital or intellectual capital (e.g., Brooking, 1996; Edvinsson & Malone, 1997; Lynn, 1998) and innovation capital (Bontis, Dragonetti, Jacobsen, & Roos, 1999; Joia, 2000). This study will be a novel

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scientific framework for research in IC accounting. The belief is that Innovation capital directly affects a company's culture and capacity to bring out new knowledge (Chang, 2007; Joia, 2000). Process capital includes operation processes, collaborative culture, specific methods, workflow, information technology systems in a company (Hsu & Fang, 2009). Intellectual property is the legal way to protect the infrastructural assets; this is why intellectual assets are referred to as protected capital if legally protected.

Besides, stakeholders are worried about corporate value because it affects present business decisions and the future assessment of firms' investment and financing decisions (Keeney & Keeney, 2009). Market capitalization is suitable for estimating corporate market value (e.g., Abdolmohammadi, 2005; Anam, Fatima, & Majdi, 2011). It is free from manipulating those charged with corporate management; hence, it is reliable. Meanwhile, Abhayawansa and Abeysekera (2008) posit that disclosing intellectual capital can improve firms' market value. It will enhance information symmetry between investors and managers, guarantee the capital market's efficiency, and facilitate better corporate governance practice (Abeysekera, 2008). As a result, it will guide users towards its future direction, signalling theory opines (Morris, 1987). The theory states that annual reports' information content signals the companies' future direction. Therefore, this explains the association between corporate value and intellectual capital reporting. The management of an entity with good value will endeavour to indicate this information in its annual reports by disclosing more IC information. The market could capture information (Anam et al., 2011).

From the preceding, the current study will extend the literature on intellectual capital disclosure to sub-Saharan Africa, particularly Nigeria; it will investigate the effect of IC disclosure and its components: process capital disclosure, human capital disclosure, innovation capital disclosure, and protected capital disclosure on market capitalization proxy for market value. To the best of the researchers' knowledge, this is the pioneer study to consider such a relationship as previous studies have considered the trend of IC disclosure (Haji & Mubaraq, 2012; Mahamad & Salman, 2011) and the impact of VAIC on traditional accounting measures (Salman, Mansor, Babatunde, & Tayib, 2012; Uadiale & Uwuijibe, 2011) in the context of Nigeria economy.

The study's remaining part is structured as follows: Section two discusses the literature review, theoretical framework, and hypotheses development. Section three discusses the research methodology. Meanwhile, section four presents the result of data analysis, and section five concludes the study.

## **2. LITERATURE REVIEW**

### **2.1 Theoretical Framework**

IC Literature has adopted different theories to explain the value relevance of IC information among market participants. One of the most celebrated theories of voluntary disclosure is the signalling theory. Signalling theory suggests that the problem of information asymmetry could be minimized if the party possessing most information could give relevant stakeholders signals (An, Davey, & Eggleton, 2011). The theory proposes that corporate entities with better performance or high-quality companies would like to distinguish themselves from low-performing or low-quality companies by sending signals to the market through voluntary disclosure and minimizing information inequality (Watson, Shrivess, & Marston, 2002).

Signalling theory argues that entities with better quality could signal their potential to the market; thus, investors re-estimate its value and then make decisions that will favour the company better (Whiting & Miller, 2008). In the same vein, the company anticipates securing more investment in the investors' favour. The costs of raising capital will reduce. Other studies, such as Oliveira, Rodrigues, and Craig (2006), argue that corporate entities will be better motivated and encouraged to disclose IC related information if the market responds positively to the information disclosure. However, the reporting format and emphasis could vary depending on companies.

### **2.2 Literature on market capitalization and IC disclosure**

Research on the influence of disclosure and corporate value has received considerable attention among academia and some notable practitioners in recent times. The signalling theory explains the relationship since it assumed the information contents of IC would change the opinion of the market participants regarding the present as well as the future performance of the business organizations (e.g., Gamerschlag, 2013; Ousama, Fatima, & Hafiz, 2011; Sang & Taylor, 2014; Vafaei, Taylor, & Ahmed, 2011). Recently, Sang and Taylor (2014) examined IC value relevance and its components in the share price of 160 companies listed in the Australian capital market within five years. Data collected from the sampled firm was analyzed using fixed-effects (FEs) Panel regression analysis.

The study finds that IC (structural capital and human) and the sampled companies' share prices are significantly related.

Also, Gamerschlag (2013) investigates the impact of human capital disclosure on the corporate value of the 130 largest quoted German companies from 2005 to 2009 using content analysis. The study utilizes a disclosure index to estimate HCD. It employs share price and equity return as proxies for market value. Also, it introduces year and industry dummies as control variables. The study surrogates HCD by four items, which include: HCRTOT refers to the amount of human capital disclosed, HCRQC refers to the quantity of "qualification/competence" information disclosed, HCRMCM refers to the quantity of "motivation/commitment" information disclosed, while HCRPS refers to the quantity of "personnel" issues (the number of keywords available in the report analyzed) disclosure.

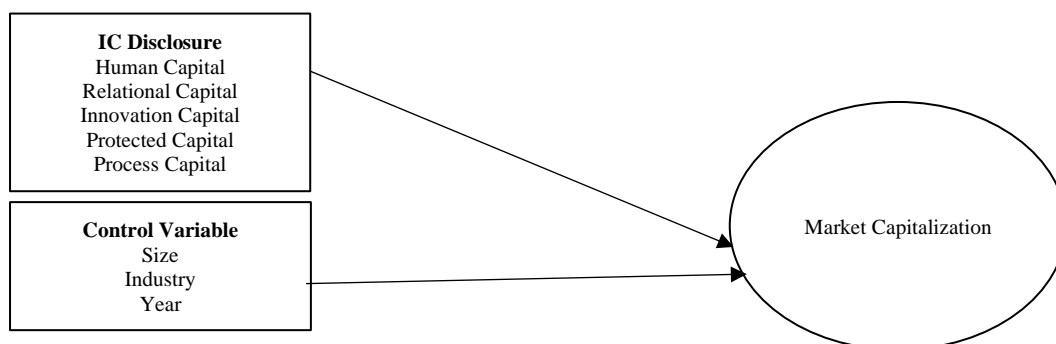
Besides, Ousama et al. (2011) examine the value relevant to Malaysian listed companies' IC information disclosure. The study utilizes a survey instrument to generate data from both the preparers and users of financial statements. It employs human capital, internal capital, and external capital as surrogates for IC. The questionnaire was administered among CFO and accountants of selected companies, loan officers, and broker institutions. ANOVA, t-test, and descriptive statistics are used for data analysis. The study reveals that IC's information content is perceived as value-relevant to both preparers and users though at different degrees. Vafaei et al. (2011) examine the extent of IC disclosure's value relevance among companies in the capital markets. It is a cross-national and comparative study in which 220 companies are sampled from 4 countries: Singapore (50), Hong Kong (49), Australia (63), and Britain (58). Word count of the companies' annual reports for in the content of companies' annual reports for each of four components (HC, SC, RC, and general terms) and a disclosure index are used to measure IC disclosure. The finding suggests that industry-specific and country-specific factors positively affect share price (value relevance) and IC disclosure. The study finds that IC disclosure gives market participants information on value relevance in the non-traditional industrial sector and Britain and Australia alone.

Swartz, Swartz, and Firer (2006) examine the JSE Securities Exchange (SA) using Ohlson's 1995 valuation model in the same vein. The study finds that IC reporting and market capitalization are significantly related. Also, Abdolmohammadi (2005) studied a sample of Fortune 500 in the USA, utilized aggregate value for ICD and documented that the information content of annual reports concerning IC affects corporate market capitalization significantly. Similarly, Vafaei et al. (2011) measure the ICD value relevance of the sample companies in Australia, Britain, Singapore, and Hong Kong. The above shows that IC is not peculiar to some countries and could be studied across companies. Also, the findings might be influenced by the economic jurisdiction of the study. Thus, it would be interesting to explore the phenomenon in the Nigerian economy.

### 2.3 Conceptual Framework

Relying on theoretical underpinning and establishing an association between market capitalization and voluntary disclosure, this study proposes the following conceptual framework. The dependent variable is measured as market capitalization. In contrast, the independent variable is IC disclosure made of relational capital disclosure, innovation capital disclosure, structural capital disclosure, human capital disclosure, and protective capital disclosure. Also included in the framework are control variables, which are considered relevant in explaining the dependent variables. These are the size of the companies and industry affiliation.

Figure 1: Conceptual framework of the study



## 2.4 Hypotheses development

Based on the underpinning theory and the existing empirical studies, this section presents this study's hypothesis. The research question is, does IC disclosure significantly affect a firm's market capitalisation based on signalling theory? Several scholars have investigated the relationship between market capitalization and IC disclosure. Abdolmohammadi (2005) and Anam et al. (2011), for instance, discover that market capitalization is significantly and positively influenced by IC disclosure. Similarly, Taliyang et al. (2014) examine the impact of IC disclosure on market capitalization in 185 Malaysian listed companies. They also find that Malaysian listed companies' market capitalization is significantly influenced by IC disclosure. Based on the above findings, the present study tests the hypothesis below:

*Hypothesis 1: Nigerian listed companies' market capitalization is significantly and positively affected by IC disclosure.*

## 3. METHODOLOGY

Due to their market capitalization on the NSE floor, 30 Nigerian listed companies were sampled for this study. The companies consistently fell within the 30 most capitalized companies from 2016-to 2018. Though their positions changed, they still meet the criteria. The study utilized data mainly from secondary sources because the core of the data needed for analysis was adequately and authoritatively extracted from the sample companies' annual reports and accounts and other relevant publications issued by the Nigerian Stock Exchange (NSE).

### 3.1 Theoretical Framework

Based on the review of previous studies, this study employs content analysis to form a checklist after familiarisation with the IC disclosure pattern. The 49 IC items are selected, comprising six innovation capital items, nine process capital, sixteen human capital, thirteen relational capital items, and five protected capital. The items in each of the categories are presented in Table 1.

Table 1: Checklist list of IC Disclosure Items

<b>A</b>	<b>Human Capital</b>	<b>C</b>	<b>Customer/Relational Capital</b>
1	Number of Employees	1	List of Customers
2	Employee satisfaction	2	Customer satisfaction
3	Employee retention	3	Customers loyalty
4	Compensation to employees	4	Customer Appreciation
5	Engagements with employees	5	Customer retention
6	Recruitment from the local communities	6	Customer service/support
7	Disability recruitment policy (number)	7	Customer feedback system
8	Employee Know-how	8	Distribution channels
9	Education Background	9	Customer Market Share
10	Employee succession planning program	10	Company awards
11	Work-related knowledge	11	Company image/ reputation
12	Knowledge sharing	12	Customer training & education
13	Employee health and safety	13	Diffusion & networking
14	Employee Expertise		
15	Training and development		
16	Cultural Diversity		
<b>B</b>	<b>Process Capital</b>	<b>D</b>	<b>Innovation Capital</b>
1	Corporate Culture	1	Innovation
2	Information Systems (Technology)	2	Research and Development
3	Financial Relations	3	Brands
4	Business Collaboration	4	Knowledge-based
5	Favourable contracts	5	Research collaboration
6	Organization flexibility	6	Goodwill
7	Organization structure		
8	Organization learning	<b>E</b>	<b>Protected Capital</b>
9	Quality management	1	Patent
		2	Copyright
		3	Trademarks
		4	Licenses
		5	Commercial rights

A four Likert scale (0-3) was used to score IC disclosure quality (e.g., Abeysekera, 2008; Guthrie et al., 2006). Following Anifowose, Abdul Rashid, and Annuar (2017) and Haji and Ghazali (2012), an item disclosed in Nigerian Naira was scored a value of 3; an item disclosed numerically was scored 2. An item disclosed in the form of narratives was scored 1, while an item, which did not feature the annual report, was allotted 0. Therefore, the total scores for overall disclosure and each of the components (TXS) were computed as the proportion of actual score (AXS) to maximum possible score (MXS) (i.e.,  $3 \times 49 = 147$ ). The TXS of a company is obtained by:

$$TXS = AXS / MXS$$

Recently, there have been worries regarding the reliability and validity of scores in IC disclosure (Dumay & Cai, 2014) because the approach has inherent problems. The scoring approach used in this study involves a two-stage checklist to avoid such problems. The study did a pilot scoring of the top ten listed companies for familiarity reasons. Then, the author scored the annual reports of the sample companies independently. Their scores were then compared, and they jointly rescored areas where they differed from correcting their differences.

### 3.2 Data Analysis Methods

In order to identify anomalies in the series, the analysis began by describing the data. Pearson Correlation Matrix was done to detect multicollinearity among independent variables (e.g., Field, 2013; Hinton et al., 2004). Due to the nature of data and finding from these preliminary analyses, the study estimated the parameters with the ordinary least square method (e.g., Field, 2013; Hinton et al., 2004). Therefore, stochastic models were used for making estimations as presented:

$$1. \quad \text{Eqn1} \quad 2. \quad MKcap_{it} = \gamma_0 + \gamma_2 \sum_{i=1}^5 TICD_{it} + \gamma_3 Industry_{it} + \gamma_4 Size_{it} + \gamma_5 Year_{it} + \varepsilon_{it} \quad 3.$$

$$\text{Eqn2} \quad MKcap_{it} = \delta_0 + \delta_2 HC_{it} + \delta_3 EC_{it} + \delta_4 INC_{it} + \delta_5 PC_{it} + \delta_6 PRC_{it} + \delta_7 Industry_{it} + \delta_8 Size_{it} + \delta_9 Year_{it} + \varepsilon_{it}$$

The total impact of IC disclosure and its components on market capitalization is estimated using equation one and equation 2, respectively. Presented in Table 2 are definitions, measurements, and sources of acronyms used in the models.

Table 2: Details of Variables

Symbol	Definition	Measurement	Sources
Log_MK	Natural log of market capitalization	Product of year-end stock price and number of shares ranking for dividend	NSE Website
HC	Weighted human capital disclosure	The ratio of actual to the maximum possible score of HC	Annual report
EC	Weighted Relational capital disclosure	The ratio of actual to a maximum possible score of RC	Annual report
INC	Weighted Innovation capital disclosure	The ratio of actual to a maximum possible score of INC	Annual report
PC	Weighted Process capital disclosure	The ratio of actual to a maximum possible score of PC	Annual report
PRC	Weighted Protected capital disclosure	The ratio of actual to a maximum possible score of PRC	Annual report
TICD	Weighted Overall Intellectual capital disclosure	The ratio of actual score to maximum possible score Overall IC	Annual report
Industry	Categories Companies along financial and non-financial line	1 for a financial firm and 0 for non-financial	NSE Website/Annual reports
Size	Size of the sampled companies	Log of total assets	NSE Website/ Annual reports
Year	Year Dummy	Dummy variable for a year of study	

## 4. RESULTS AND FINDINGS

### 4.1 Descriptive Statistics

The analysis begins with a data description to establish their suitability for different estimations. The descriptive statistics results reveal that the companies average disclosed about 43.6% of the overall disclosure items. Human capital was most disclosed among the five components, with an average of 46.3% of the expected disclosure. This is closely followed by process capital with a mean of 45.3%, while protected capital has the least disclosure. The results also show that all the variables' median values fall between their means and maximum values. This indicates normality, proving the variable to mesokurtic shapes in their probability distributions. The variables are moderately customarily distributed based on skewness and kurtosis criteria (e.g., Field, 2013; Wooldridge, 2010). It can be drawn from the above that the parameters could be estimated with the ordinary least square method.

Table 3: Result of Descriptive Statistics

	Mean	Median	Maximum	Minimum	Std. Dev.	Skewness	Kurtosis	Ob
LOG_MK	11.30	11.250	13.104	9.780	0.675	0.455	3.783	90
TICD	0.436	0.422	0.687	0.238	0.098	0.324	2.642	90
SIZE	10.58	10.627	11.740	7.280	0.809	-1.445	6.938	90
HC	0.463	0.458	0.625	0.250	0.091	-0.216	2.486	90
EC	0.443	0.410	0.795	0.051	0.164	0.197	2.577	90
PC	0.453	0.444	0.778	0.148	0.116	0.386	3.417	90
PRC	0.340	0.333	0.600	0.067	0.087	0.323	5.548	90
INC	0.408	0.389	0.889	0.000	0.148	0.827	4.783	90

#### 4.2 Summary of Pearson Correlations Coefficient Matrix

Table 3 presents the results of the correlation matrix. The results indicate that perfect multicollinearity was absent among the variables because all these figures are acceptable based on the submissions of Field (2013) and Gujarati and Porter (2009). Except in TICD and its constituents, which are not regressed together in the same model, the pair's correlation coefficient is lower than 0.5. This signifies the non-awfulness or non-presence of collinearity problems among the independent variables. A correlation analysis is considered to investigate the relationship among dependent and independent variables, and Table III presents the finding. One could deduce that market capitalization is positively significantly correlated with all intellectual capital components. It could provide a better basis for further analysis using the regression estimation method.

Table 4: Coefficient of Correlation Result

	Log_MK	TICD	HC	EC	PC	InC	PrC	Size
Log_MK	1							
TICD	.436**	1						
HC	.226*	.885**	1					
EC	.454**	.912**	.716**	1				
PC	.351**	.906**	.755**	.767**	1			
InC	.431**	.662**	.413**	.532**	.597**	1		
PrC	.261*	.459**	.383**	.276**	.447**	.288**	1	
Size	.418**	.235*	.151	.230*	.278**	.179	.054	1

\*\* Correlation is significant at the 0.01 level (2-tailed).

\* Correlation is significant at the 0.05 level (2-tailed).

#### 4.3 Regression Result of ICD and Market Capitalization

The present study's primary aim is to find out the Intellectual Capital Disclosure (ICD) impact on Nigerian listed companies' corporate market value. The hypothesized correlation was tested with the aggregated model (i.e., equation). The results of model I indicate that Nigerian listed companies' market capitalization is significantly and positively affected by overall disclosure. The possible implication is that more disclosure would enhance the market value. This result supports previous studies such as Anam et al. (2011) and Abdolmohammadi (2005). However, from individual components' perspectives, Nigerian listed companies' market value is significantly positively influenced by innovation, external, and protected capital. The results also unexpectedly reveal that market capitalization's corporate market value measure is significantly and negatively influenced by process capital and human capital. Besides, the firm's size significantly affects corporate value, supporting Anam et al. (2011).

Besides, both the year effect and industry effect significantly negatively impact corporate market value during the period under study in the two models. It could be said that industry and year are not necessary for the IC disclosure in Nigeria. The overall variation in market value is explained by IC disclosure to 71.2% on the aggregate and 83.2% on the individual component model, as revealed by the adjusted R-square. In contrast, F-statistic reveals the model (F-statistic, 44.54,  $P < 0.01$  for model I and F-statistics, 49.58,  $P < 0.01$  for model II). with a value of 44.

The detailed summaries of the estimation are presented in Table IV. It seems the autocorrelation is not a severe problem with DW values from both models, which is approaching 1, as suggested by earlier studies (e.g., Field, 2013; Wooldridge, 2010).

Table 5: Intellectual capital disclosure and market capitalization

Variable	Model 1				Model 2			
	Coefficient	Std. Error	t-Stat	Prob.	Coefficient	Std. Error	t-Stat	Prob.
TICD	1.935	0.245	7.915	0.000				
HC					-0.854	0.209	-4.094	0.000
EC					1.825	0.300	6.087	0.000
INC					0.589	0.086	6.861	0.000
PRC					1.216	0.111	10.967	0.000
PC					-0.549	0.244	-2.251	0.027
SIZE	0.496	0.068	7.291	0.000	0.391	0.043	9.135	0.000
FIN	-0.395	0.030	-13.197	0.000	-0.315	0.032	-9.753	0.000
YEAR1	-0.114	0.014	-8.415	0.000	-0.075	0.010	-7.521	0.000
YEAR2	-0.091	0.003	-26.764	0.000	-0.053	0.004	-13.174	0.000
C	5.125	0.615	8.333	0.000	6.242	0.426	14.666	0.000
R <sup>2</sup>	0.729				0.850			
Adj.R <sup>2</sup>	0.712				0.832			
F-value	44.543				49.589			
Prob.	0.000				0.000			
DW	0.936				0.997			

## 5. CONCLUSION AND RECOMMENDATIONS

The study has investigated the potential effect of ICD on corporate market value surrogated by market capitalization, measured by the number of shares ranking for divided and product of end year share price. The study employed content analysis for the top 30 Nigerian listed companies' annual reports from 2016 to 2018. IC was classified as innovation capital, human capital, protected capital, process capital, and external capital. Overall, IC disclosure and innovation, external capital, and protected capital disclosure significantly and positively influenced Nigerian listed companies' market value. The more these are disclosed, the better the companies' market value is. Contrary to expectation, human and process capital disclosure negatively affected market value, suggesting that Nigeria investors do not necessarily value these components.

Practically, one would expect "the people in charge of governance" to pay attention to IC information disclosure in financial reports because investors are conscious of IC information. However, this is subject to certain limitations, which future studies could instigate to extend the present research. Since this study used 30 top listed companies NSE, its findings cannot be generalized to cover smaller companies. Further research is needed to empirically determine if the results are generalizable to all listed companies, regardless of their sizes.

## REFERENCES

- Abdolmohammadi, M. J. (2005). Intellectual capital disclosure and market capitalization. *Journal of Intellectual Capital*, 6(3), 397-416.
- Abeyssekera, I. (2008). Intellectual capital disclosure trends: Singapore and Sri Lanka. *Journal of Intellectual Capital*, 9(4), 723-737. doi:10.1108/14691930810913249.
- Abhayawansa, S., & Abeyssekera, I. (2008). An explanation of human capital disclosure from the resource-based perspective. *Journal of Human Resource Costing and Accounting*, 12(1), 51-64.
- An, Y., Davey, H., & Eggleton, I. R. C. (2011). Towards a comprehensive theoretical framework for voluntary IC disclosure. *Journal of Intellectual Capital*, 12(4), 571-585. doi:10.1108/14691931111181733
- Anam, O. A., Fatima, A. H., & Majdi, A. R. H. (2011). Effects of intellectual capital information disclosed in annual reports on market capitalization: Evidence from Bursa Malaysia. *Journal of Human Resource Costing & Accounting*, 15(2), 85-101. doi:10.1108/14013381111157328
- Anifowose, M., Abdul Rashid, H. M., & Annuar, H. A. (2017). The Moderating Effect of Board Homogeneity on the Relationship Between Intellectual Capital Disclosure and Corporate Market Value of Listed Companies in Nigeria. *International Journal of Economics, Management and Accounting*, 25(1), 71-103.
- Bontis, N. (1996). There is a price on your head: managing intellectual capital strategically. *Business Quarterly*, 60, 40-78.
- Bontis, N., Dragonetti, N. C., Jacobsen, K., & Roos, G. (1999). The Knowledge Toolbox: A Review of the Tools Available to Measure and Manage Intangible Resources. *European management journal*, 17(4), 391-402.
- Bounfour, A. (2002). How to measure Intellectual Capital's dynamic value: the IC-dVAL approach. Paper presented at the 5th World Congress on Intellectual Capital, McMaster University, Hamilton, Ontario, Canada.
- Bounfour, A. (2003). The IC-dVAL approach. *Journal of Intellectual Capital*, 4(3), 396-413. doi:10.1108/14691930310487833
- Brooking, A. (1996). *Intellectual Capital: A core asset for the third millennium*: Cengage Learning EMEA.
- Chang, S. (2007). *Valuing Intellectual Capital and Companies' Performance: Modifying Value Added Intellectual Coefficient (VAIC™) in Taiwan IT industry*. (Doctoral of Business Administration Program), Golden Gate University.
- Edvinsson, L., & Malone, S. M. (1997). *Intellectual Capital: Realising Your Company's True Value by Finding Its Hidden Brainpower*: HarperBusiness: New York.
- Field, A. (2013). *Discovering statistics using IBM SPSS statistics (3rd ed.)*. London: Sage.

- Gamerschlag, R. (2013). Value relevance of human capital information. *Journal of Intellectual Capital*, 14(2), 325-345. doi:10.1108/14691931311323913
- García-Meca, E., Parra, I., Larrán, M., & Martínez, I. (2005). The explanatory factors of intellectual capital disclosure to financial analysts. *European Accounting Review*, 14(1), 63-94.
- Haji, A. A., & Mubaraq, S. (2012). The trends of intellectual capital disclosures: evidence from the Nigerian banking sector. *Journal of Human Resource Costing & Accounting*, 16(3), 184-209. doi:10.1108/14013381211286360
- Hsu, Y.-H., & Fang, W. (2009). Intellectual capital and new product development performance: The mediating role of organizational learning capability. *Technological Forecasting and Social Change*, 76(5), 664-677. doi:10.1016/j.techfore.2008.03.012
- Joia, L. A. (2000). Measuring intangible corporate assets: linking business strategy with intellectual capital. *Journal of Intellectual Capital*, 1(1), 68-84.
- Keeney, R. L., & Keeney, R. L. (2009). *Value-focused thinking: A path to creative decision-making*: Harvard University Press.
- Lynn, B. (1998). Intellectual capital: the key to value-added success in the next millennium. *CMA Magazine*, 72(1), 10-15.
- M'Pherson, P. K., & Pike, S. (2001). Accounting, empirical measurement, and intellectual capital. *Journal of Intellectual Capital*, Vol. 2(No. 3), pp. 246-260.
- Mahamad, T., & Salman, R. T. (2011). Intellectual capital reporting in Nigeria: A way forward. <http://www.aibuma.org/abstract.php?value=101>.
- Mangena, M., Pike, R. H., & Li, J. (2010). Intellectual capital disclosure practices and effects on equity capital cost: UK evidence: Institute of Chartered Accountants of Scotland.
- Marr, B., & Chatzkel, J. (2004). Intellectual capital at the crossroads: managing, measuring, and reporting IC. *Journal of Intellectual Capital*, 5(2), 224-229. doi:10.1108/14691930410533650
- Morris, R. D. (1987). Signalling, agency theory and accounting policy choice. *Accounting and business research*, 18(69), 47-56.
- Mouritsen, J., Bukh, P. N., & Marr, B. (2004). Reporting on intellectual capital: why, what and how? *Measuring Business Excellence*, 8(1), 46-54.
- Oliveira, L., Rodrigues, L. L., & Craig, R. (2006). Firm-specific determinants of intangibles reporting: evidence from the Portuguese stock market. *Journal of Human Resource Costing & Accounting*, 10(1), 11-33.
- Orens, R., Aerts, W., & Lybaert, N. (2009). Intellectual capital disclosure, cost of finance and firm value. *Management Decision*, 47(10), 1536-1554.
- Ousama, A. A., Fatima, A. H., & Hafiz, A. R. M. (2011). The usefulness of intellectual capital information: preparers' and users' views. *Journal of Intellectual Capital*, 12(3), 430-445. doi:10.1108/14691931111154724
- Pulic, A. (2000). MVA and VAIC analysis of randomly selected companies from FTSE 250. online] [www. icon. net](http://www.icon.net).
- Roos, J., Roos, G., Dragonetti, N. C., & Edvinsson, L. (1997). *Intellectual Capital. Navigating in the new business landscape*: MacMillan Press, London.
- Salman, R. T., Mansor, M., Babatunde, A. D., & Tayib, M. (2012). Impact of Intellectual Capital on Return on Asset in Nigerian Manufacturing Companies. *Interdisciplinary Journal of Research in Business*, 2(4), 21- 30.
- Sang, K. H., & Taylor, D. (2014). Intellectual capital vs the book-value of assets: A value-relevance comparison based on productivity measures. *Journal of Intellectual Capital*, 15(1), 65-82. doi:10.1108/jic-04-2013-0048
- Stewart, T. A. (1991). *Brainpower: How Intellectual Capital is Becoming America's Most Valuable Assets*. *Fortune*, 123(11), 44-70.
- Stewart, T. A. (1997). *Intellectual capital: The new wealth of nations*. New York.
- Swartz, G., Swartz, N., & Firer, S. (2006). An empirical examination of the value relevance of intellectual capital using the Ohlson (1995) valuation model. *Meditari Accountancy Research*, 14(2), 67-81.
- Uadiale, O. M., & Uwuigbe, U. (2011). Intellectual Capital and Business Performance: Evidence from Nigeria. *Interdisciplinary Journal of Research in Business*, 1(10), 49-56.
- Vafaei, A., Taylor, D., & Ahmed, K. (2011). The value relevance of intellectual capital disclosures. *Journal of Intellectual Capital*, 12(3), 407-429. doi:10.1108/14691931111154715
- Watson, A., Shrivs, P., & Marston, C. (2002). Voluntary disclosure of accounting ratios in the UK. *The British Accounting Review*, 34(4), 289-313.
- Whiting, R. H., & Miller, J. C. (2008). Voluntary disclosure of intellectual capital in New Zealand annual reports and the "hidden value." *Journal of Human Resource Costing & Accounting*, 12(1), 26-50.
- Wooldridge, J. M. (2010). *Econometric analysis of cross-section and panel data*: MIT press.