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**INTELLECTUAL CAPITAL AND DIVIDEND POLICY FORMULATION:  
EVIDENCE FROM NIGERIA'S NON-FINANCIAL FIRMS**

**ADENLE**, Oluwatimileyin Esther  
Department of Accounting  
Osun State, University, Osun State, Osogbo  
oluwatimileyinadenle@uniosun.edu.ng

**ADEOYE**, Lukmon Adewale  
Department of Accounting  
Osun State, University, Osun State, Osogbo  
mailwaleadeoye1@gmail.com

**ADAMU**, Danjuma  
Department of Accountancy  
School of Business and Management Studies  
Federal Polytechnic Ede, Osun State.  
danjumaadamu007@gmail.com

**MBAH**, Fatimo Imike  
Bursary Department  
Fountain University, Osogbo, Osun State  
mbahfatima@gmail.com

**ABSTRACT**

*Intellectual capital is relevant to performance and value creation of companies. The role of intellectual capital on dividend policy formulation is crucial. This study assessed the influence of intellectual capital on dividend policy formulation of listed non-financial firms in Nigeria within a range of 7 years (2013-2019). The study utilized descriptive research design. The population comprised 112 listed non-financial firms while the sample frame is 36 listed non-financial firms. Descriptive statistics, correlation analysis and panel ordinary least square regression were employed for data analysis. The study found that intellectual capital has significant positive influence on dividend policy formulation in the studied population, as evidenced by the estimated coefficient of 0.137 and p value of 0.003. The study concludes that investment in intellectual capital is a strategic choice firms can use to influence the valuation of their firms which will in turns lead to higher dividend payout. The study recommends that non-financial firms should invest more on intellectual capital because it has the tendency to bring about improved dividend policy formulation.*

**Keywords:** Dividend policy formulation, dividend payout, intellectual capital, structural capital

**INTRODUCTION**

The business environment is today, intensely competitive and highly disruptive owing to advances in information and communication technology that has reduced the power of national boundaries to protect firms from international competition (Ateke, 2015). The situation is made even more complex by the fickleness of today's consumer, who have become increasingly smarter and better informed customers, and have greater access to different product and channels from which to freely choose (Ateke & Amangala, 2020). To achieve and maintain competitive edge in this business landscape, firms increasingly rely on their intellectual capital - the set of employee-based resource

and proficiencies that drive firm's value creation and performance (Roos & Roos, 2011). A distinctive feature of intellectual capital is that it does not have a physical form, hence intangible. Intellectual capital is an intangible asset but that meet some conditions to be disclosed in a firm's financial statement.

The many benefits that intellectual capital provides for firm is added value and competitive edge. Sofian et al. (2011) revealed that above 30% of firm's value is usually characterized by intellectual capital. Mochamad et al. (2021) identified three components of intellectual capital: human capital (the mixture of knowledge, abilities and innovativeness of people within the organisation), structural capital (the structural competences, information systems, infrastructure, organizational culture and routine) and relational capital (symphonic network of associations between the company and its partners). In this study however, we take a uni-dimensional view of intellectual capital, and examined its influence on dividend policy formulation among non-financial sector firms in Nigeria.

Dividend is the quota of cash distributed to shareholders as return for their investment in a firm, depending on the firm's dividend policy. An ideal dividend policy should to equilibrium between dividend payments and company growth, which result to maximization of firm value (Edvinsson & Malonme, 2011). Intellectual capital efficiency has significant effect on dividend payout rate among Nigeria firms, a firm's ability to utilize the skills, knowledge and capabilities of employees effectively and in a distinctive productive way leads to increase in profitability; which in turn leads to high dividend payout to shareholders. The objective of this study is to examine the influence of intellectual capital on dividend policy formulation of listed non-financial firms in Nigeria.

## LITERATURE REVIEW

### **Intellectual Capital**

Intellectual capital is the process of transforming knowledge into valuable assets for the company (Hardanti, 2016). Mochamad et al. (2021) define intellectual capital as intangible assets originating from organizational capital, customer capital and human resources. Intellectual property can be used by firms to create wealth. There are three components of intellectual capital namely structural, human and relational capital.

Intellectual capital encompasses creativity, talents, abilities and expertise of the organization workforce, which are perceived in the policies, ideas, and innovative procedures developed by the firm and with the entrepreneurial spirit attained by the individuals in the organization (Zimmerer, et al. 2008 as cited in Hardanti, 2016). Taking into consideration these descriptions. At the heart of intellectual capital is human capital, which entails employee's competencies, knowledge, innovation and capability (Isaac et al., 2010).

According to Bontis (2000) intellectual agility, competence and positive attitude of the employees are companies' intellectual capital. Competence consist of education and skills of the employees; attitude entails the employees work behavioral dimensions whereas intellectual agility deals with innovativeness and employees' ability to provide solution to business problems.

### **Dividend Policy Formulation**

Dividend is the return on shareholders' investment in a company (Longinidis & Symeonidis, 2013). Dividend policy endeavor to ascertain the distributable amount to shareholders and the

amount of retain earnings for subsequent investment by the firm from its profits. Organisation dividend policy can however influence shareholders' value (Aazam & Vali (2014). Dividend policy can be influenced by several factors one of which is firm profitability, Pruitt and Gitman (1991) in their study of some large firms in the United State of America identified that dividend decision of firms is mostly influenced by profitability. Yousof and Ismail (2016) also revealed in their study of some firms in Malaysia that dividend policy can be influenced by earnings, firm size, investment policy and the competencies or capabilities of the firm's management and employees to improve the firms' profitability. Dividend policy can affect the investment opportunities, financial structure, stock prices and liquidity positions of companies.

### **Intellectual Capital and Dividend policy formulation**

Lunawat (2013) stated that intellectual capital significantly impact investors, especially, in the area of forecasting future dividend yield. Lunawat (2013) further stated that the presence of effective intellectual capital in an organization will increase firm value and as a result of this increase the firm will decide to increase its shareholders' dividend and also increase retained earnings.

When an organization have sufficient intellectual capital, it means the organization's employees and management have a reputation of being reliable, knowledgeable, trustworthy and innovative. These features help organization's dividend policy formulation, as managements and staffs make effective and efficient decisions that improve shareholders' dividend. Bohren et al. (2012) showed that conflict of interest among shareholders can be mitigated through dividend payout.

Scholars have analyzed the role and significance of intellectual capital on performance and creation of value proficiencies of firms (Roos & Roos, 2011). Nielsen and Farooq (2015) and Werastuti (2014) argue that high relational and human capital are significant drivers of favourable dividend policies. An organization can build intellectual capital by giving consideration to employee suggestions and by incorporating employees' ideas into firm's plans and operations. The existence of intellectual capital in firms lead to increased value (Mochamad, et al. 2021). An organization with a reputation of being reliable, trustworthy and having knowledgeable and innovative employees is likelier to achieve better dividend yields than firms without substantial intellectual capital (Lunawat, 2013; Arvidsson, 2011).

Reports in extant literature show that intellectual capital affect the value of listed firms on Tehran's Stock exchange. This position is based on a study conducted by Salehi and Zimon (2021), which assessed the connection between intellectual capital and value creation of quoted firms on Tehran's Stock Exchange for the period ranging from 2012 to 2018, which represented intellectual capital with work experience and education of board members, and used panel regression to analyze the data.

Nazir et al. (2020) examined the association between intellectual capital and efficiency of 76 financial establishments in China, Hong Kong and Taiwan. The study revealed that intellectual capital efficiency has positive significant effect on profitability of the sampled financial institutions; and that human and structural capital do not have significant relationship with efficiency ratio of financial institutions in Taiwan and Hong Kong.

Relatedly, Curado (2017) examined the eminence of intellectual capital disclosure in the contemporary economic era. Utilizing data gathered from 15 firms quoted on Thailand's Stock Exchange from 2013 to 2017. The study measured internal capital disclosure, external capital,

human capital and profitability as variables; and demonstrated that intellectual capital disclosure is essential to economic growth in today's knowledge based economy.

Also, Onyekwelu and Ubesie (2016) examined intellectual capital and assessment of companies quoted on Nigeria's Stock Exchange. The study use capital employed efficiency and human capital efficiency as measures of intellectual capital. While Market to Book Value and Earnings per share were used to test the effect of intellectual capital on firm's value. The study revealed that human capital efficiency has positive significant impact on Market to Book Value; while human capital efficiency has negative and insignificant effect on Market to Book Value.

In addition, Wijaya et al. (2016) assessed effects of intellectual capital on agency conflicts through its impact on firms, financing decision, investment decision and dividend policy. Data collected from 90 firms listed on the Indonesian stock exchange were used for the study. The period of the study ranged from 2004 to 2013. Three-stages least squares method was used in this study. The outcome of the study showed that higher intellectual capital to reduce agency conflict by improving dividend policies, investment decisions and funding decisions.

Furthermore, Nielsen and Farooq (2015) probed the connection between intellectual capital disclosure and dividend strategies of biotechnology listed on the companies on the Copenhagen Stock Exchange. The study utilized firms' intellectual capital disclosure data from 2001 to 2010. The results show that high intellectual capital does not usually result to higher dividend payout. The study also found that a company with lower information asymmetries and high intellectual capital disclosure will have a more favorable dividend policies.

Consequent upon the foregoing submissions and reports, the current study hypothesizes as follows:  
Ho<sub>1</sub>: Intellectual capital has no significant influence on dividend policy of quoted non-financial firms in Nigeria.

### **Theoretical Framework**

The underpinning theories of this study are the resources dependency theory and the knowledge based theory. Pfeffer and Salancik propounded the resource dependency theory in 1978, this theory assumes that resources are fundamental to the success of organisations. This theory stated that access and control over resources is a foundation for the acquisition of power. The resource dependency theory also assume that organizations has valuable resources such as employees that are knowledgeable and skillful, the employees acquire the skills and knowledge from different training courses, the knowledge and experiences of the employee will enhance their capability to add value to the business through increased competitive advantage and appropriate investment (Ahmed, 2006 and Kesner, 1988). Particularly, the enhanced performance resulting from the added value of human capital would facilitate the payment of reasonable remuneration to management, while shareholders would also be magnificently rewarded with a reasonable dividend payment.

Furthermore, Ramezan (2011) proposed that oranisation with intangible assets have retained earnings as the less costly source of funding, which brings about greater agency conflicts and lower dividend payouts. Resources dependence theory has been reviewed over the years by scholars some of which is the study of Sharif & Yeoh (2014), the theory was criticized on the ground that it does not really describes the performance of an organisation explicitly.

Knowledge-based theory of the firm (Grant & Baden-Fuller, 1995) on the other hand, states that expertise of individuals in the organisation is the most noteworthy component of intellectual capital, because it bestows long-term competitive advantage (Hunter, 2002). Leonard-Barton (1992) revealed that knowledge is a phenomenon that is difficult to imitate and which confer competitive advantage on firms. Knowledge-based theory highlights four ways of skill gathering which are technical structures, employees' skills and knowledge, principles and norms and management systems. According to Liebeskind (1996) firms and institutions are essential in creating and conserving competitive advantage through valuable knowledge. Knowledge-based theory assumes that knowledge is an essential productive resource of companies that adds value, and have strategic significance. Knowledge encompasses technology, information and skills (Grant, 1996).

However, an organization that have core knowledge as a crucial strategic assets would work towards improving its existing knowledge and its top priorities would be developing new knowledge (Viedma & Marti, 2007). The persistence and competitive advantage of organisations is derived from the capability to advance knowledge and skills in order to acclimatize to environmental demands (Khalique & Isa, 2013). Knowledge-based theory has been the subject of considerable debate.

## METHODOLOGY

This study provides empirical evidence on the influence of intellectual capital on dividend policy formulation in Nigeria. The study adopted casual research design. The key interest of the study is to reveal how intellectual capital predicts differences in dividend policy formulation among non-financial firms that are listed on the Nigerian Stock Exchange from 2013 to 2019. The population of the study consist listed non-financial firms in Nigeria. The Nigeria Stock Exchange (NSE) provides that there are 112 non-financial firms in Nigeria. The sample size of the study is 36 listed non-financial firm which are purposively selected.

Intellectual capital is the independent variable and is represented as ratio of personnel cost to total value added (total value added was measured by the difference between revenue and the cost of purchased goods and services), Dividend policy (dividend payout) is the dependent variable and was measured by dividend per share divided by earnings per share. The data used in the study were extracted from each company's annual report and from the Nigeria Stock Exchange FACT Book. The data gathered were analyzed using descriptive statistics and panel ordinary least square regression (OLS) technique.

### Model Specification

This model will be used to capture the influence of intellectual capital on dividend policy formulation in Nigeria's non-Financial Firms. In line with frameworks of Onyekwelu and Ubesie (2016) and Wijaya et al. (2016) we specify thus:

$$DP = f(IC, FSZ, FA) \dots\dots\dots (1)$$

The econometric form of the model is given as:

$$DP = \beta_0 + \beta_1 IC + \beta_2 LFSZ + \beta_3 FA + \mu t \dots\dots\dots (2)$$

Whereas:

DP= Dividend Payout

IV = Intellectual capital

LFSZ = Log of firm size

FA = Firm's age

$\beta_0$  = Intercept of the regression equation

$\beta_1$ ,  $\beta_2$  and  $\beta_3$  = Coefficients of the explanatory variables

## RESULTS AND DISCUSSION OF FINDINGS

**Table 1: Average Dividend Payout from 2013 to 2019**

Var.	Obs.	Mean	Std. Dev.	Min	Max
DP	252	3.949	5.801	0	57.63
IC	252	3.749	5.902	-83.388	73.385
FSZ	252	7.10	.835	5.094	9.342
FAG	252	26.379	13.536	1	55

Source: Author's Computation, 2022

The results in Table 1 reveals that the average dividend payout for the period is 3.949 with standard deviation of 5.801. The average estimated intellectual capital for the period covered is 3.749 with a standard deviation of 5.902. The standard deviation which is higher than the mean indicates the existence of high variation in the intellectual capital of listed non-financial firms over the period covered. The results further reveal that the maximum and minimum value of intellectual capital are 73.385 and -83.388 respectively. Also, the average firm size is 7.10 with standard deviation of 0.835, minimum and maximum of 5.094 and 9.342 respectively. For the firm age, the estimated average age of the sampled firm is 26.379, standard deviation of 13.539 with a maximum value of 55 and a minimum value of 1.

**Table 2: Estimated Matrix of Correlations**

Var.	(1)	(2)	(3)	(4)	(5)	(6)	VIF	1/VIF
DP	1.000							
IC	0.077	1.000					1.633	.626
FSZ	0.372	0.203	0.084	-0.031	1.000		1.099	.921
FAG	0.173	-0.084	0.031	0.072	0.109	1.000	1.056	.966

Source: Author's Computation, 2022

The outcomes of the correlation analysis are presented in Table 2. The results in the Table revealed that intellectual capital has positive connection with dividend policy formulation, given the estimated correlation coefficient of 0.077 between intellectual capital and dividend policy formulation. Furthermore, the correlation coefficient of 0.372 reveal that a weak direct connection between firm size and dividend payout, signifying that older firms pay more dividend than newer ones. The estimated correlation coefficient of 0.173 implies a weak positive connection between firm age and dividend payout of listed non-financial firms in Nigeria. The pre-estimation diagnostic test for multicollinearity shows an estimated value with the highest VIF of 1.633 recorded by human capital efficiency. Since none of the estimated VIF value is close to the threshold of 10, which signifies that multicollinearity does not exist among the explanatory variables contained in the model for this study.

**Table 3: Diagnostic Test for Serial Correlation and Heteroscedasticity Results**

Diagnostic Test	Type of Test	P Value	Remarks
Heteroscedasticity	Breusch-Pagan	0.000	Presence of Heteroscedasticity
Serial Correlation	Wooldridge	0.0038	Presence of serial correlation

Source: Author' Computation, 2022

**Table 4: Estimated Panel Feasible Generalized Least Square Panel Regression**

DP	Coeff.	St.Er.	t-value	p-value	[95% Conf Interval]	Sig
IC	0.137	0.053	2.82	0.003	0.032	0.221 ***
FSZ	2.500	0.252	10.84	0.000	2.135	3.085 ***
FAG	0.052	0.025	2.97	0.004	0.024	0.061 ***
Constant	-18.286	1.722	-10.78	0.000	-21.642	-14.931 ***
Mean dependent var		3.949	SD dependent var			5.801
No. of observation		252.000	Chi-square			164.433
Prob. > chi2		0.000	Akaike crit. (AIC)			4430.870

\*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$

Source: Author's Computation, 2022

From the results, the estimated coefficient of 0.137 with p value of 0.003 reveal that intellectual capital has significant positive influence on dividend policy formulation of the sampled firms. Hence, there is consistent evidence of significant positive impact of intellectual capital on dividend policy formulation. The results of the analysis were based on both panel least square and panel generalized least square revealed that human capital efficiency had positive and significant influence on the dividend payout given the estimated coefficient 0.137 and p-value of 0.003 and t-value of 0.032. The implication of the results of study is that intellectual capital has significant influence on dividend policy formulation. Thus, the study rejects the null hypothesis. Hence, intellectual capital has significant influence on dividend policy formulation of listed non-financial firms in Nigeria.

The result of this study is consistent with that of Wijaya et al. (2016) and Nielsen and Farooq (2015) who also found a positive and significant connection between intellectual capital and dividend policy formulation. The findings disclosed that an organisation having higher intellectual capital have the tendency to improve its firm value, hence, increase its dividend payout. This position aligns with the report that companies with higher intellectual capital disclosure tends to have more favorable dividend policies (Nielsen, & Farooq, 2015). The implication arising from this finding is that intellectual capital is relevant to dividend policy formulation of firms in emerging countries like Nigeria. The results in this study suggest that frequent and stable dividend payout by listed non-financial firms in Nigeria requires investment in intellectual capital. Moreover, intellectual capital increase firm's resources needed to drive financial performance which make more proceeds available to be shared to shareholders in the form of dividend payout.

## CONCLUSION AND RECOMMENDATIONS

This study provided empirical evidence on the influence of intellectual capital on dividend policy formulation of quoted non-financial firms in Nigeria. The outcome of the study implies that investment in intellectual capital serve as strategic choice that management of firms can use to

influence the valuation of their firms, in terms of higher dividend payout which is expected to attract more investors to the company, and increase its share price. Based on the conclusion of the study, the study recommends that investors should choose companies with high intellectual capital in order to have higher returns on their investment. Management of non-financial firms in Nigeria should pay close attention to developing intellectual capital in order to improve their dividend policy formulation. Lastly the study recommends that non-financial firms should invest more on intellectual capital, if they want to achieve higher dividend pay-out that reduces agency conflict.

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