



Board Diversity and Intellectual Capital Performance of Listed Non-Financial Service Firms in Nigeria

Tajudeen Lawal¹, Daniya Adeiza Abdulazeez^{2✉}, and Musa Saidu³

¹Department of Accounting and Finance, Kwara State University, Malete, Kwara State Nigeria

²Department of Entrepreneurship and Business Studies, Federal University of Technology, Minna, Niger State, Nigeria

³Department of Accounting and Finance, Kwara State University, Malete, Kwara State Nigeria

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ABSTRACT

Purpose : This study examines the effect of board diversity on the intellectual capital performance of listed non-financial service firms in Nigeria. This is due to the paucity of studies in this area especially within the context of Nigeria even at the instance of the gradual and steady shift from the industrial to information/knowledge based economy.

Method : The study employs correlational research design to examine the 44 sampled firms for a period of ten years (2011-2020). Quantitative data extracted from the annual reports of the firms were analysed using descriptive statistics, correlation and Fixed-Effects regressions.

Findings : The regression results revealed that board composition and board size have significant positive effect on intellectual capital performance. However, board ownership has insignificant effect on intellectual capital performance. Consequently, the study failed to reject the second null hypothesis.

Novelty : Previous Nigerian studies concentrated on the use of traditional Value Added Intellectual Coefficients (VAIC) which is currently considered inappropriate. Given the previous studies, this study is novel because it uses the Modified Value Added Intellectual Coefficient (MVAIC).

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INTRODUCTION

Money or property that delivers wealth to organizations is sometimes referred to as capital. Historically, the entity's primary assets for producing wealth have been financial and physical capital respectively. However, with the advent of the knowledge-based economy, these forms of assets have become insufficient for decision-making, prompting the recognition of the importance of intangible forms of capital which are rarely found in the company's statement of financial position. The creation and manipulation of intellectual capital rather than the production of physical goods is the source of economic value in a knowledge-based economy (Guthrie et al., 2004).

With the advent of a knowledge-based economy, IC performance becomes crucially important for the growth and development of firms, in general, and knowledge-based firms, such as telecommunication, IT and service industries, in particular, as their key resources are intangible and intellectual in nature (Goh, 2005; Kamath, 2007; Ahuja & Ahuja, 2012). It is therefore important for firms to make adequate investments in their intellectual capital.

A knowledge economy, based on the explanation of the Organisation for Economic Co-operation and Development (OECD, 2006), is one in which production, distribution, and use of knowledge are the primary drivers of growth, wealth creation and employment across all industries, not just those classified as high-tech or knowledge-intensive. The importance of intellectual capital (IC) has increased in proportionate to improvement in knowledge economy (Cabrita & Vaz, 2006). Intellectual capital is defined as the intangibles, such as patents, intellectual property rights, copyrights and franchises. In the view of Lerro and Schiuma (2013), IC is seen as a substantial value creator and a strategic component in boosting a company's competitiveness. Intellectual capital performance is referred to as the efficiency with which a company uses both its physical and intellectual resources. Board diversity

* E-mail: daniyad3rd@yahoo.com

Address: Minna, P. M.B. 65, Nigeria

refers to the distribution of the differences between members of the board of directors relating to the characteristics of the differences in attitudes and opinions

The board provides entrepreneurial and strategic leadership. It also promotes an ethical culture and responsible corporate citizenship. The diversity of the board is an important control mechanism for monitoring managerial decisions and ensuring the firm's efficient operation on behalf of its stakeholders. The role of the corporate board in influencing the intellectual capital performance of non-financial services firms in Nigeria is investigated in this study.

The current research is based on two primary factors. First, there are few studies in this field in Nigeria. The very few Nigerian studies in this instance are the studies of Isa and Ismail (2016) on the impact of board composition on the intellectual capital efficiency of Nigerian banks and Yahaya and Tijjani (2020) on the impact of internal corporate governance instruments on intellectual capital in eight publicly traded oil and gas companies in Nigeria. Second, the VAIC approach is the most extensively used method for assessing IC performance in the literature. It assesses the value added by businesses, as well as the efficiency of IC and a company's physical and financial capital. However, the original VAIC model is seen to be deficient due to the exclusion of relational capital. Given the aforementioned, this study contributes towards improving the paucity of Nigerian studies in this area and also, utilized the Modified Value Added Intellectual Coefficient (M-VAIC) which incorporates all the components of IC in accordance with the classification and description of IC as against the adoption of VAIC in its original form. This study, therefore, examines the effect of board diversity on the intellectual capital performance of non-financial services firms in Nigeria from 2011 to 2020.

Theoretically, this study is anchored by resource dependence theory. According to the resource dependence theory, every corporation is reliant on a number of stakeholders, including other businesses that hold crucial resources that are required for its operations. Pfeffer and Salancik (2003) who are both the proponents of this theory contend that since no corporation can retain all of the strategic resources, it must develop long-term connections with stakeholders who can help them obtain those resources. This necessity pushes businesses to interact with the outside world, which provides them with social and relational capital. Because this research looks at the performance of intellectual capital in the annual reports and intellectual capital is a resource endowed in entities, hence, the choice of resource dependence theory.

Concerning the variables for the study, effort has also been made to examine their empirical relationship which formed the basis for the development of research hypotheses. First, Board composition refers to the proportion of non-executive directors to the total number of directors. Executive directors have specific talents, expertise, and in-depth knowledge of the company's operational policies and daily operations. Outside directors, on the other hand, are needed to provide fresh ideas, independence, neutrality, and knowledge from their respective professions (Firth, Fung & Rui, 2007).

Empirically, previous research showed mixed results. While some found a positive relationship and negative relationship between board composition and intellectual capital performance, other studies found no correlation between BDC and IC. For instance, Dashtbayaz et al, (2020) examined the impact of corporate governance on intellectual capital and revealed that board independence had a positive and significant influence on human capital. Ali and Oudat (2021) investigated the impact of board characteristics on the intellectual capital performance of commercial banks in Bahrain. The regression analysis results revealed that board independence had a significant positive impact on intellectual capital performance. Faisal et al. (2016) investigated the impact of corporate governance on the intellectual capital efficiency of listed KSE commercial banks. The findings of the investigation revealed that board composition has no significant impact on IC performance. However, in a study of thirty-eight firms in Nairobi Securities Exchange during the period 2003 to 2014 by Kenyanya et al. (2017), the authors found that board independence had a negative impact on the value-added of the firms. Given the foregoing mixed findings, the study, therefore, hypothesized that:

H₀: Board composition has an insignificant effect on the intellectual capital performance of listed non-financial service firms in Nigeria

H₁: Board composition has a significant effect on the intellectual capital performance of listed non-financial service firms in Nigeria

Also, shares of companies can be held by a variety of investors. The ability of owners to exercise control and influence management choices through voting powers is determined by the size of ownership stakes of different investors. The control is often directed towards ensuring that managers focus on the firm's long-term value and make an investment that boosts long-term value, such as IC investments if they own a piece of the company (Saleh et al., 2009). As a result, if managers own a larger percentage of equities, their interests and those of shareholders will be more aligned. Jensen and Meckling (1976) also suggested that higher management's stockholding of the company's capital could help the agency's challenges.

Faisal et al. (2016) concluded that directors' ownership had a significant positive impact on IC performance of 21 commercial banks listed in Karachi Stock Exchange during the period 2010 to 2014. Similarly, in examining the effect of managerial ownership on intellectual capital performance in 20 banking companies listed on the In-

Indonesia Stock Exchange from 2013 to 2016, Oktavian and Ahmar (2019) found that managerial ownership had a positive and significant effect on intellectual capital performance. Jamei (2017), on the other hand, discovered that between 2011 and 2015, there was no significant association between management ownership and intellectual capital performance of 104 companies registered on the Tehran Stock Exchange. As a result, we formulate the following hypothesis.

H₀: Managerial ownership has an insignificant effect on the intellectual capital performance of listed non-financial service firms in Nigeria

H₂: Managerial ownership has a significant effect on the intellectual capital performance of listed non-financial service firms in Nigeria

Board size represents another deep-seated variable used in this study which is the total number of board members in an organization, including executive directors, non-executive directors, and independent directors. The size of the board of directors varies depending on the needs of the company and the resources available to cover the associated costs.

Empirically, Faisal et al (2016) examined the impact of corporate governance on the intellectual capital efficiency of the listed KSE commercial banks during the period 2010 to 2014. The study used six (6) years data of 21 commercial banks listed in Karachi Stock Exchange. The finding of the study revealed that board size has a significant impact on IC performance. The above finding agrees with the conclusions of Hassan and Yaacob (2019) on the relationship between corporate governance mechanisms and intellectual capital efficiency of 150 large companies listed on the main board of Bursa, Malaysia for 2014 as well as that of Aslam and Haron (2020) on the impact of corporate governance on intellectual capital efficiency (ICE) in 29 Islamic banks of the Organisation of Islamic Cooperation (OIC) countries from 2008 to 2017. Conversely, the studies of Piri and Nateghian (2015) on the effect of board characteristics on the intellectual capital of 92 companies listed at Tehran Stock Exchange during 2004-2012, Jamei (2017) on the relationship between corporate governance mechanisms and intellectual capital in 104 listed companies, and Ali and Oudat (2021) on the influence of board characteristics on intellectual capital performance of commercial banks in Bahrain during the period 2015-2019, found an insignificant negative relationship between board size and ICP. Sequel to the mentioned findings, the study formulated the following hypothesis.

H₀: Board size has an insignificant effect on the intellectual capital performance of listed non-financial service firms in Nigeria

H₃: Board size has a significant effect on the intellectual capital performance of listed non-financial service firms in Nigeria

RESEARCH METHODS

The study is based on correlational research design. Data for the study were collected from the pre-existing annual reports of the 44 sampled non-financial services firms which are seen to be more inclined to IC during the period 1st January, 2011 through to 31st December, 2020. This was based on the stratified sampling technique which first divided the population based on some specific characteristics and then used a purposive sampling technique for each sub-group of the population (Creswell, 2013). Therefore, the samples of the study are firms in the subsector of consumer goods, industrial goods, pharmaceuticals, conglomerates, and Information and Communication Technology (ICT). The rationale for selecting these firms is based on the assumption that they are knowledge-intensive firms. Also, for firms to be part of this study, some criteria were employed. First, the firms must have been quoted on the floor of the Nigerian Exchange Group as at 1st January, 2011 and must have not been delisted from the floor of the Nigerian Exchange during the period of study. Second, the firms must have not been taken over or merged during the period of study and finally, the firms must have filed in complete annual reports on the Nigerian Exchange Group during the period of study. By applying the above filters, forty-four (44) firms met the criteria and so selected as the sample size of the study. Table 1 presents the sectoral distribution of firms and the sample used in this study.

Table 1. Population and Sample Size

No	Sector Distribution	Population	Delisted	Sample
1	Consumer Goods	21	4	17
2	Health Care	10	2	8
3	Industrial Goods	15	6	9
4	ICT	7	2	5
5	Conglomerates	6	1	5
	Total	59	15	44

Source: Authors' Compilation, 2022

Data for the study were analyzed using descriptive statistics and fixed-effect regressions. The choice of fixed effect regression was informed by the outcome of heteroskedasticity test which shows a P-value of 0.5362, indicating that the data set are homoskedastic. This does not require any further test such Hausman and Lagrange Multiplier (LM) tests. Also and concerning variables and measurement, the dependent variable of the study is the intellectual capital performance of firms. It indicates the extent to which the firm's tangible and intangible assets were utilized by management. Many academics have measured intellectual capital performance using the Value Added Intellectual Capital (VAIC) devised by Pulic (1998). This method is very important because it allows the researcher to measure the contribution of both tangible (physical and financial) and intellectual (human, structural and relational) resources to create value added (VA) by the firm (Al-Musali & Ku Ismail, 2012a). Calculating VAIC is a two-step process (Pulic, 1998). The first stage is to calculate the Value Added, and the second step is to calculate the VAIC. The Value Added is computed as equation 1.

$$VA = \text{Staff Cost} + \text{Operating Profit} + \text{Depreciation} \dots\dots\dots 1$$

Whereas, the VAIC model is expressed as equation 2.

$$VAIC = HCE + SCE + CEE \dots\dots\dots 2$$

HCE is an indicator of value added efficiency of Human Capital (VA/HC);

HC = total salaries and wages.

SCE is an indicator of value added efficiency of structural capital (SC/VA);

SC = VA-HC or (value added) – (total salaries and wages).

CEE is an indicator of value added efficiency of capital employed (CEE = VA/ CE);

CE = total net asset.

However, because the original VAIC model did not account for relational capital, this study adopted the modified VAIC as per the studies of (Vishnu & Gupta, 2014; Nadeem, 2016) as a proxy for intellectual capital performance. (M-VAIC). RC which is obtained as expenses on marketing, selling, and advertising expense was added as a new variable to the modified VAIC model employed in this investigation. The proxies used in this investigation were chosen in accordance with the available literature on IC. As a result of the addition of RC is shown by equation 3.

$$M\text{-VAIC (ICP)} = HCE + SCE + RCE + CEE \dots\dots\dots 3$$

RCP is relational capital performance

RC = VA/ marketing, selling and advertising expenses

With regards to independent variables, board composition, board ownership and board size are taken into consideration in this study.

Board Composition

Board composition is defined as the proportion of outside directors (non-executive) to the total number of directors (Haniffa & Hudaib, 2006). Based on the resource dependency perspective, independent directors provide additional resources, information and legitimacy to a firm. They also improve the quality of managerial decisions, leading to improved firm performance (Hillman et al., 2000; Gabrielson & Huse, 2005). It is argued that independent directors are more likely than inside directors to support managerial long-term oriented decisions that enhance firm's long-term performance (Ibrahim et al., 2003). Therefore, it is reasonable to expect that independent directors, through giving advice and counsel, are more likely to support IC-related strategies, such as investing in human resources, R&D activities and information technology (Al-Musalli et al., 2012b). The composition of the board to include more outside directors may influence the entity's perception of intellectual capital, hence the introduction of the variable in this study. It is measured as the proportion of the board of directors, who are non-executives to the total number of directors on the board (Mahmudi, et al., 2015; Nyarko et al., 2018; Alfraih, 2018).

Board Ownership

Firms may be owned by a diverse mix of different types of investors. With a few exceptions, these investors become owners in the firms in order to accomplish financial objectives. The ownership structure of a company refers to the distribution of control and ownership. Control is seen as the ability to affect decisions and for shareholders, it is exercised through voting powers. While ownership is regarded as the right to cash flows of the company, which is proportionate to shareholdings (Shehu, 2012). Board ownership is the percentage of ordinary shares held by executive management directly or indirectly. Executive management holds shares of a company directly when such shares are bought in their names. However, when an executive manager holds shares of a company on behalf of other persons or firms, such shares are said to be indirectly held. Jensen et al. (1976), state that agency conflicts between managers and shareholders can be resolved when managers have ownership interests in their organization. As a result, firms' intellectual capital performance may improve. Board ownership is measured as the proportion of executive share ownership to the total shares of the firm (Noradiva et al., 2016; Hatane et al., 2017; Isa et al., 2022).

Board Size

Board size is the total number of directors (executive and non-executive) sitting on the board. The resource dependency theory posits that larger boards are more likely to include a large pool of experts with diverse industrial and educational backgrounds and skills that enhance the board’s information processing capabilities. This can mitigate individual directors’ deficiencies in business skills through collective decision makings, which in turn improves the quality of strategic decisions and actions made by a firm (Abeysekera, 2010). The author further argued that larger boards are more likely to increase the firm’s ability to obtain and secure critical resources from their environment, such as IC resources. Furthermore, in order to ensure significant influence and efficient supervision as well as performance on the part of senior management, adequate composition of the board of directors in such a way that its size corresponds, among other factors, to the type of organization, the sector and the influence of its environment is of paramount importance. Board size is measured as the total number of board members both executives and non-executives (Abeysekera, 2010; Hatane et al., 2017).

In this study, some control variables were used. Previous researches have revealed that firm size, auditor type, and firm age all have a significant impact on intellectual capital performance (for example, Al-Musalli and Ku Ismail, 2015; Buallay, 2018). As a result, the impact of firm size, auditor type, and firm age were taken into account in this study. Past studies have suggested that the size of the company is an important factor, which has a positive impact on the intellectual performance of companies (for instance, El-Bannany, 2013; Piri et al., 2015; Kenyaya et al., 2017; Buallay & Hamdan, 2019). This study, therefore, incorporates this variable to examine its impact on IC performance. Firm size is measured as the natural logarithm of Total Assets (Zhang, 2012; Ferreira et al, 2012; Alshhadat, 2017). Stewardship accounting entails rendering accounts by the managers of an entity to its owners and other stakeholders to facilitate judgment about the entity. As for auditor type, a dummy variable 1, if audited by big Four audit firms or its affiliation, otherwise, zero was used (Oliveira et al, 2006; Ferreira et al, 2012; Gan, et al.; 2013; Firmasa et al., 2018). The number of years a company has been incorporated in the capital market may be relevant in explaining investment in intellectual capital. Firm age is measured as the number of years passed since incorporation (Barde, 2009; Damayanti & Budiyanawati, 2009). The regression model for the study is shown by equation 4.

$$ICP_{it} = \beta_0 + \beta_1 BDC_{it} + \beta_2 BON_{it} + \beta_3 BSZ_{it} + \beta_4 FSZ_{it} + \beta_5 ATP_{it} + \beta_6 FGE_{it} + \epsilon_{it} \dots\dots\dots 4$$

- ICP_{it} = Intellectual Capital Performance of firm i in period t
- BDC_{it} = Board Composition of firm i in period t
- BON_{it} = Board Ownership of firm i in period t
- BSZ_{it} = Board Size of firm i in period t
- FSZ_{it} = Firm size of firm i in period t
- ATP_{it} = Auditor Type of firm i in period t
- FGE_{it} = Firm Age of firm i in period t
- ε_{it} = Error term
- β₀ = Constant
- β₁ = Constant

RESULTS AND DISCUSSIONS

The results of the analyzed data are presented as follows. The results of the descriptive statistics are first presented as depicted in Table 2, followed by regression results.

From Table 2, intellectual capital performance has a mean of 13.94, with a minimum of -133.1689 and a maximum of 178.794. However, the standard deviation of 20.94 suggests a high level of dispersion in the intellectual capital performance among the sampled firms.

The board composition has a minimum value of 0.50 and a maximum of 0.925. This means that the minimum percentage of non-executive directors is 50% for the firms, while the maximum composition of non-executive directors, to the total number of board members, is 92.5%. The average percentage of non-executive directors, to

Table 2. Descriptive Statistics

Variables	Observation	Mean	Std. Dev	Min	Max
ICP	440	13.94	20.94	-133.16	178.79
BDC	440	0.8203	0.0738	0.5	.925
BON	440	0.1209	0.1706	0	0.94
BSZ	440	8.797	2.468	4	17
FSZ	440	7.0194	0.8781	4.6999	9.2611
ATP	440	0.600	0.4904	0	1
FGE	440	46.118	20.8617	6	97

Source: Authors’ computation 2022

Table 3. Correlation Matrix

Variable	ICP	BDC	BON	BSZ	FSZ	ATP	FGE	VIF
ICP	1.00							
BDC	0.17	1.00						2.02
BON	-0.13	-0.45	1.00					1.57
BSZ	0.36	0.28	-0.15	1.00				1.96
FSZ	0.47	0.01	-0.12	0.52	1.00			2.47
ATP	0.30	0.23	-0.34	0.35	0.48	1.00		1.77
FGE	-0.15	0.01	-0.25	0.06	0.14	0.21	1.00	1.44

Source: Generated by Authors from Annual reports of the Sampled Firms 2022

the total number of directors, is 82%. Board ownership had a minimum value of 0 and a maximum value of 0.92, signifying that there were firms whose executive directors did not have shareholdings during the study period. While the highest percentage of shares held also by directors was 92%. On average, board ownership had a mean value of 0.121, meaning that, most of the firms' executive directors had shares to the tune of 12%. Board size had a minimum value of 4 and a maximum value of 17. On average, board size has a mean value of 8.

Firm size has a mean of 7.02, with a minimum of 4.70 and a maximum of 9.26. However, the standard deviation of 0.87 suggests a high level of dispersion in the total assets among the sampled firms. The mean auditor type was 0.60. The minimum value is 0 and the maximum value is 1. The standard deviation of 0.49 shows no significant dispersion among the sampled firms. Finally, age has a mean value of 46.11 years. The minimum value is 6 years, while the maximum value is 97 years respectively.

Table 3 shows the correlation coefficients on the relationship between the dependent variables (intellectual capital performance) and explanatory variables (board composition, managerial share ownership, board size, firm size, auditor type and firm age) of the study. The values of the correlation coefficient range from -1 to 1. The sign of the correlation coefficient indicates the direction of the relationship (positive or negative), and the absolute value of the correlation coefficient indicates the strength, with larger values indicating stronger relationships. The correlation coefficients on the main diagonal are 1.0 because each variable has a perfect positive linear relationship with itself.

The relationship between board composition and other explanatory variables is found to be weak and positively related with the exception of board size and auditor type which are mild and positively related. However, a mild and negative relationship is found between board composition and board ownership. Also, the relationship between board ownership and all other explanatory variables showed a negative relationship. Also, the relationship between board size with other explanatory variables is found to be weak and positive with the exception of board ownership which is weak and negative. However, the relationship between board size with board composition, firm size, and auditor type is mild and positive.

The relationship between firm size with other explanatory variables is found to be mild and positive except for board composition and firm age which is weak and positive. However, a negative and weak association is found between firm size and board ownership. The relationship between auditor type with other explanatory variables is found to be mild and positively related except for board composition which is weak and positive. However, the relationship between auditor type with board ownership is negative. Likewise, the relationship between profitability with other explanatory variables is found to be weak and positive with the exception of board ownership which showed a weak and negative relationship. In addition, the relationship between firm age with other explanatory

Table 4. Fixed Effect Regression Results

Variables	Coefficient	Std. Error	t-stat	Prob
Cons	-80.17	16.10	-4.98	0.000
BDC	42.49	16.03	2.68	0.008
BON	-9.43	6.06	-1.56	0.121
BSZ	1.066	0.470	2.27	0.024
FSZ	10.06	1.51	6.67	0.000
ATP	1.71	2.25	0.76	0.446
FGE	-0.25	0.047	-5.27	0.000

R-square= 0.3366

F- statistic = 16.68

Prob. = 0.0000

Source: Results Output from STATA

variables is found to be a weak and positive while, board ownership has weak and negative with ICP. However, the relationship between firm age and board nationality showed a mild and positive relationship.

Furthermore, prior to tests of hypotheses, the multi-collinearity test is employed to ascertain the correlation between the study's independent variables. The explanatory variables of the model were examined in this study using VIF to determine whether they exhibit multi-collinearity. When the VIF is greater than 10, it is likely that there is harmful multi-collinearity (Neter et al., 1989 and Gujarati 2003). The test's results revealed that the VIF was 2.02, 1.57, 1.96, 2.47, 1.77 and 1.44. Given that the mean VIF is 1.66, multi-collinearity is not present.

Hausman Specification Test

The Hausman specification test determines how closely statistical models match the facts under investigation. In panel data analysis, the Hausman specification test aids in determining whether a random effects or fixed effects model should be used. The Hausman specification test was conducted, and the results demonstrated that the fixed effects model was adequate with a significance level of 1% (0.000).

The results in Table 4 show an overall R^2 of 0.3366 for the variables. This shows that the independent variables were capable of explaining about 34% of the systematic variation in the value of the dependent variable. The fitness of the model is further corroborated with the F-statistics and p-values of 16.68 and 0.0000 respectively.

Effect of Board Composition on ICP

Results from Table 4, show that board composition has a coefficient of 42.49 which is significant at 5%. This shows that the composition of the board in terms of the ratio of non-executive directors to total directors positively and significantly affected the intellectual capital performance of the non-financial services firms in Nigeria. This is in line with those of Isa et al. (2016); Dashtabayaz et al. (2020), Ali et al. (2021). However, it is in contrast to that of Faisal et al. (2016). Given this discovery, we, therefore, reject the null hypothesis which states that board composition has an insignificant effect on the intellectual capital performance of listed non-financial firms in Nigeria.

Effect of Board Ownership on ICP

As regards board ownership, the regression results showed a coefficient value of -9.49 which is neither significant at 1% nor at 5%. This indicates that board ownership has a negative but insignificant effect on ICP of the firms. This implies that for every increase in the percentage of shares held by executive directors, their ICP will reduce insignificantly by the coefficient value. The results suggest that the variation in the extent of intellectual capital performance in the annual reports of the non-financial services firms in Nigeria cannot be explained by managerial shareholdings. This finding is not surprising in view of the fact that the shares owned by the directors of the sampled firms are largely insignificant. The finding is in line with that of Oktavian et al. (2019). But it is contrary to that of Jamei (2017). On this note, the study fails to reject the second null hypothesis which states that board ownership has an insignificant effect on the ICP of listed non-financial firms in Nigeria.

Effect of Board Size on ICP

The finding of the study also revealed that board size recorded a coefficient value of 1.07 which is significant at 5% level. This shows that the size of the board of directors positively and significantly enhances the intellectual capital performance of the non-financial services firms in Nigeria. Consequently, the third null hypothesis is thus, rejected.

For the control variables, firm size recorded a coefficient value of 10.06 which is significant at 1%. This means that the size of the firms has a significant impact on intellectual capital performance. As for auditor type, the coefficient value is 1.71 which is neither significant at 1% nor at 5%. This implies that the type of audit firm that examined the book of accounts of the firms does not have a significant effect on their intellectual capital performance. Firm age recorded a coefficient value of -0.250 which is significant at 1%. This means that the age of the firms has a significant impact on intellectual capital performance. This implies that as the firms grow older, their ICP declines.

CONCLUSIONS

In recent years, board diversity variables have drawn an increasing amount of research from all over the world. Most of the empirical studies on board structure, however, have taken place in the developed world. This is due to the fact that diverse databases, regulatory systems and environmental factors affect board diversity in different nations. Consequently, generalizing the findings of those studies in the Nigerian environment may be impossible. As a result, this study, therefore, deems it fit to examine the impact of board diversity on intellectual capital performance in Nigerian listed non-financial services companies during the period 2011-2020, The study is based on the notion that diverse boards, through their experiences and professional competencies may have a significant influence on ICP.

The findings from the study revealed that having a board with more non-executive directors is linked to better intellectual capital performance. Similarly, the findings also disclosed that the size of the board members with

requisite knowledge and ideas has a significant impact on intellectual capital performance. However, the finding of the study showed that board ownership has no significant effect on the firms' intellectual capital performance.

Following the highlighted findings of the study, the following recommendations have been put forward to guide the firms.

The number of non-executive directors on the boards of the studied firms should be increased or pushed to a maximum limit set by the code of corporate governance to continue to enjoy an enhanced ICP. This will also increase the current size of the board of the firms which also yielded a significant effect on ICP. This can be achieved by bringing in more non-executive directors and other directors on the basis of their requisite knowledge, expertise, and track records of excellence in the successful management of allied firms.

The ownership stake of the board of directors should be increased. This will enable them to devise and implement policies that are in the best interest of the shareholding, considering their increased ownership stake in the firms. To achieve this, right issue should be made to the existing directors and they should be compelled to subscribe for the shares of the firms.

Finally, firm age should not be relied upon as a basis for an enhanced ICP as older firms tend to dwindle in ICP more than firms in their infancy.

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