



FIRM SPECIFIC CHARACTERISTICS AND DIVIDEND PAYOUT RATIO: AN INSIGHT OF QUOTED COMPANIES ON THE NIGERIAN STOCK EXCHANGE

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Abstract

This study investigates the relationship between firm specific characteristics and dividend payout ratio of quoted firms in Nigeria. The population of the study consists of one hundred and sixty-nine (169) firms listed on the Nigerian Stock Exchange as at 31st December 2018 and from which a sample of one hundred and two (102) firms were selected for a period of nine (9) years spanning from 2010 to 2018 making a total of nine hundred and eighteen (918) completed observations. Data collated from secondary source were analysed on the basis of POLS, FE and RE estimates. For the purpose of consistency and efficiency, the study further carried out post estimation test which include restricted F-test and Hausman test. The estimation result of the RE indicated that inventory intensity and firm share price intensity jointly had a positive and significant relationship with dividend payout ratio. In addition, capital intensity, labour intensity and R&D intensity jointly had a negative and significantly relationship with dividend pay-out ratio. Hence, this study recommends that managers of Nigerian quoted firms should lower the amount of cash spent on capital intensity, labour intensity and R&D intensity so that the value of profitability will increase; and the same time, dividend pay-out ratio will equally increase. In addition, inventory intensity and share price intensity of the firms should be maintained so as to continue paying good dividend to the shareholders that will lead the firm to achieve the shareholders' value maximisation objective.

Keywords: firm specific characteristics, dividend pay-out ratio, dividend relevance theory, bird-in-hand theory.

INTRODUCTION

In financial management, dividend is one of the four decision areas that require special attention in making financial policies for business enterprises, shareholders and other stakeholders. Dividend payment is a right of shareholders and according to Lintner (1956), it serves as a strategy used by firm managers to meet diverse needs of the different shareholders. Miller and Rock (1985) noted that dividend is an end result of corporate payout policy and indicates a complicated combination of investment strategy, financial decision and private information. Companies can pay dividend to shareholders either in form of cash or script from the after-tax earnings made over a financial period either as interim or final dividend (Odia & Ogiedu, 2013). The important of dividend payout policy according to Okoughenu, Ogbeiwi, and Isah (2016) is that it attempts to



strike a balance between what a firm pays out as dividend and what it retains in the firm. Providence is thus required in formulating dividend payout policy because any decision against payment of dividends is usually real or interpreted by shareholders that all is not well with a firm. Along with firms' financing decisions, investment decisions are also a firm characteristic that can influence dividend payout ratio. Hence, dividend payout policy depends on the financing investments opportunities of the firm. Thus, a firm with fewer investment opportunities may prefer to have a higher dividend payout ratio while a growing company on the other hand will have a lower dividend payout ratio (Oladipupo & Okafor, 2013).

A lot of characteristics exist in firms and each of this specific characteristic plays a unique and vital role to the firm in achieving their goals and objectives. In making decisions on dividend payout, the connection between and amongst these specific characteristics is important. As argued by Ross, Westerfield, and Jaffe (2009), since changes are expected to occur in these variables such as culture, general economic condition and perception, the pattern of paying dividend cannot be modelled mathematically, thus this called for the recognition of the connection between those elements at complex situation. Regardless of the intellectual complications regarding the mathematical model to adopt for firms payout ratio, it is important to know that the shareholders are interested in knowing the specific variables that affect dividend payout policy in order to make rational decisions on their investment.

Therefore, firm specific characteristics serve as a connecting rod that affects the dividend payout ratio of a firm. Firm specific characteristics may include capital intensity, labour intensity, inventory intensity, firm share price intensity, and research and development (R&D) intensity. More capital intensive firm for example, can use depreciations and amortizations to slice costs. Therefore, firms that are more capital intensive may benefit more from depreciations deductibility which may have influence on the dividend payout ratio. On the other hand, labour intensive firms will reduce capital intensity of operation but wages and salaries increase that would also have influence on the dividend payout ratio of the firm.

Another aspect of firm specific characteristic that may relate to dividend payout ratio is how much a firm incurs on R&D. There are many fiscal incentives through multiple jurisdictions that promote the investment in R&D and as such, R&D programmes according to Hanlon and Heitzman (2010) are conditional on tax rates and credit incentives. Thus, this may have influence on the dividend payout ratio because the higher the amount incurred on R&D, the lower the profit in which dividend is paid out to the shareholders.

A higher inventory firm may increase the value of income leading to higher dividend payout ratio to the shareholders. The reason is that increase in closing inventory for the period will increase the profit value which consequently increases the dividend payout ratio of the firm. Share price of a firm is a function of its value. A firm with higher market value in the stock market tends to attract more investors to that company. Therefore, making investment decisions that may improve the market value of a firm which would lead to increase in the profit value as well as dividend payout ratio to shareholders. This study thus seeks to find out the relationship between capital intensity,



labour intensity, inventory intensity, R&D intensity, firm share price intensity and dividend payout ratio of firms quoted in the Nigerian Stock Exchange.

Statement of the Research Problem

The firms quoted on the Nigerian Stock Exchange (NSE) have over time played some role in the Nigeria economy. However, these firms have experienced global financial crisis and changes in technology which have resulted to unstable dividend payout ratio. Consequently, many researchers (see for example, Kaźmierska-Jóźwiak, 2015; Okoughenu, et al, 2016; Adu-Boanyah, Ayentimi, & Frank, 2017; Ahmadi, 2018) have tested various firm specific characteristics to know how they associated with dividend payout ratio. However, it was observed that most of the empirical studies have given robust attention to firm size, firm age, leverage, liquidity, firm growth, sales, profitability, market value to book value, auditor type, cash flows, ownership structure, board independence, business risk among others. Other variables of firm specific characteristics such as capital intensity, labour intensity, inventory intensity, R&D intensity and firm share price intensity were relegated. Basic grounded or hard core research in this regard is still in its infancy and as such, this may hinder making general conclusions on how firm specific characteristics relate to dividend payout policy of quoted firms. Therefore, it is imperative to fill this gap in the existing body of knowledge.

Research Questions

Against the backdrop of the problem that exists in the body of literature, the following research questions become pertinent:

- i. What is the relationship between capital intensity and dividend payout ratio of firms quoted on the Nigerian Stock Exchange?
- ii. How does labour intensity and dividend payout ratio relate in firms quoted on the Nigerian Stock Exchange?
- iii. To what extent does inventory intensity relate to dividend payout ratio of firms quoted on the Nigerian Stock Exchange?
- iv. Is there any significant relationship between R&D intensity and dividend payout ratio of firms quoted on the Nigerian Stock Exchange?
- v. Is the relationship between firm share price intensity and dividend payout ratio of firms quoted on the Nigerian Stock Exchange significant?

Objectives of the Study

Thus, the broad objective of this study is to investigate the relationship between firm specific characteristics and dividend payout ratio of firms quoted on the Nigerian Stock Exchange. The specific objectives are to:

- i. Examine the relationship between capital intensity and dividend payout ratio of firms quoted on the Nigerian Stock Exchange;



- ii. Investigate the relationship between labour intensity and dividend payout ratio of firms quoted on the Nigerian Stock Exchange;
- iii. Assess the relationship between inventory intensity and dividend payout ratio of firms quoted on the Nigerian Stock Exchange;
- iv. Determine the relationship between R&D intensity and dividend payout ratio of firms quoted on the Nigerian Stock Exchange; and,
- v. Evaluate the relationship between firm share price intensity and dividend payout ratio of firms quoted on the Nigerian Stock Exchange.

Research Hypotheses

In line with the above, the following null hypotheses are constructed for test:

H₁: The relationship between capital intensity and dividend payout ratio is significant.

H₂: The relationship between labour intensity and dividend payout ratio is significant.

H₃: The relationship between inventory intensity and dividend payout ratio is significant.

H₄: The relationship between R&D intensity and dividend payout ratio is significant.

H₅: The relationship between firm share price intensity and dividend payout ratio is significant.

LITERATURE REVIEW

Conceptual Review

In financial management, dividend is considered as a prime component that informs corporate financial and investment decisions in a business organisation. Dividend can be viewed in various contexts. For instance, in the context of the investors, Shefrin and Statman (1984) noted that dividends are beneficial because they represent a frequent stream of returns which will improve self-control by avoiding irrational behaviour. In the context of management, Jensen (1986) noted that dividends represent a means to minimise agency problem by arranging additional free cash flows from manager's expropriation. Dividend can be used by the firm according to Bhattacharya (1979) to send signal to the market that only good quality firms can afford to pay dividend, hence, increasing share prices which attracts investors. Dividend payments also signal an indication of future strength and build investors' confidence. By extension, dividends reflect the characteristics of the firm like the firm's profitability, investment opportunity and size (Fama & French, 2001).

The importance of dividend payout ratio of companies as documented by Allen and Michaely (2002) is that it involves the combination of substantial amount of money paid to shareholders, the repeated nature of the decision by the firm and closely related to and interacts with most of the financial and investment decisions of firms. Therefore, to explain the concept, the following model is used as a means to describe the relationship between firm specific characteristics and dividend payout ratio in aggregate. It is thus imperative to draw attention to the paradigm below:

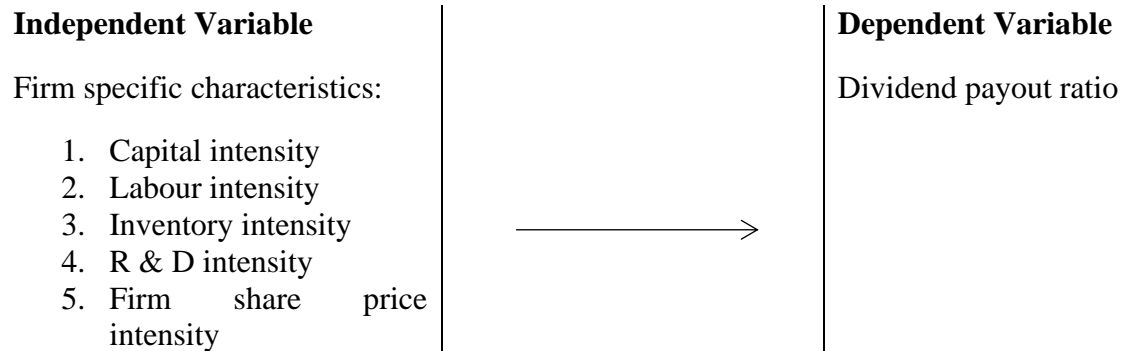


Figure 1 Conceptual Framework, 2020.

The conceptual framework in Figure 1 above describes the relationship between firm specific characteristics representing the independent variable and proxies; capital intensity, labour intensity, inventory intensity, R&D intensity and firm share price intensity and the dividend payout ratio the dependent variable in the study.

Theoretical Review

In literature, the theory underlying dividend policy implementation in companies was formally explained in line with the bird-in-hand proposition developed by Lintner (1956) and supported by Gordon (1959). Against this theory, dividend irrelevance proposition was developed by Miller and Modigliani in 1961 and the theory was based on the background of modern-day company finance concept. According to Miller and Modigliani (M&M) (1961), dividend policy is not relevant for organisations' cost of capital and firms' value in a global market with the exemption of taxes or transaction fee. M&M go further and suggest that to an investor, all dividend policies are effectively the same since investors can create "homemade" dividends by adjusting their portfolios in a way that matches their preferences (Al-Malkawi, Rafferty, & Pillai, 2010). However, against the Miller and Modigliani (1961)'s irrelevance proposition, other theories such as dividend relevant theory developed by Walters and James in 1993, tax differential theory, information content principle, agency theory and among others emerged that considered dividend policy to be relevant to the organisation which also indirectly support the bird-in-hand proposition. This study therefore is anchored on the theoretical foundation of the dividend relevance theory and the bird-in-hand theory.

Dividend Relevance Theory

Dividend relevant theory was developed by Walters and James in 1993, and according to the theory, dividend policy of company affects the value of the firm. This theory clearly shows the importance of the relationship existing amongst the firm's cost of capital and rate of return. This theory provided a useful picture of the determinants of dividend payout policy on equity firms with



varied assumptions about the profitability of the company (Baker, Veit & Powell, 2002). The assumptions of this theory are: constant return on investment, retention of internal financing and cost of capital are constant. Al-Kuwari (2009) stated that all investments of a company are financed by the firm through retained earnings. This theory further stated that the firm's share will have the highest market value where the rate of return is greater than the capital and dividends are not declared at that particular dividend period. On the other hand, where rate of returns are less than capital declaration of the highest possible dividends will lead to the maximum price of its shares.

The Bird-In-Hand Theory

This theory was developed by Lintner (1956) and supported by Gordon (1959). The theory stated that the worth of near future dividend is incomparably higher than the worth of distant future dividend. This proposition assumed that since the future is uncertain, it will negatively influence the value of dividend if it is to be received in the future. The theory suggests that shareholders will have preference for cash dividends over capital gains because they need to realise wealth in order to consume. In simplicity, the theory implies that capital gain is not predictable as dividends and the unpredicted forces in the market determined the firm shares price but not the firm's managers.

Empirical Review

In the United States, Gill, Biger, and Tibrewala (2010) investigated the determinants of dividend payout ratios and constructed a database from a selection of approximately 500 financial-reports announced by public companies in year 2007. The study found direct relationship between dividend payout ratio and profit margin, sales growth, debt-to-equity ratio, and tax both in Service and Manufacturing firms. However, the study reported that the results were different when the dividend payout ratio is defined as the ratio between the cash dividend that the after-tax cash flow, not the after tax earnings of the companies.

In Pakistan, Afza and Mirza (2010) examined whether ownership structure and cash flows determine corporate dividend policy. Three years data ranging from 2005 to 2007 of 100 companies listed on the Karachi Stock Exchange (KSE) were analysed by the study and the study used ordinary least square (OLS) regression approach to analyse the data. The results showed that managerial and individual ownership, cash flow sensitivity, size and leverage are negative whereas, operating cash-flow and profitability are positively related to cash dividend. In addition, the study found that managerial ownership, individual ownership, operating cash flow and size were the most significant determinants of dividend behaviour whereas, leverage and cash flow sensitivity do not contribute significantly in determining the level of corporate dividend payment in the firms in Pakistan.

Khan and Shamim (2017) tested the sector-wise dividend payment behaviour of the Karachi Stock Exchange (KSE) for the period 2009 to 2013. The study carried out unit root test for panel data and pooled ordinary least square (POLS) test for 15 non-financial sectors and the results indicated that the earning per share has a positive impact on dividend payment in eight sectors including beverages, travel and leisure, fixed-line telecommunication, food processing, household goods,



personal goods, automobiles, and electricity. However, forestry (paper and board) was negatively associated with the dividend payout ratio. In addition, it was reported by the study that free cash flow has a positive impact on dividend payment in fixed-line telecommunication and a negative impact on chemical, forestry, construction and material, engineering, beverages, tobacco, travel and leisure, food processing, household goods, pharmaceutical and biotech, and automobiles.

In Poland, Kaźmierska-Jóźwiak (2014) examined the determinant of dividend payout policy on non-financial institutions listed on the Warsaw Stock Exchange in Poland for the period from 2000 to 2012. The explanatory variables in the study were leverage, liquidity, profitability, size and risk. It was established by the random effect regression estimation that profitability and leverage have significant negative relationship with dividend payout ratio. Furthermore, the study revealed a positive relationship between size, risk and dividend payout ratio.

In Asean Emerging Market, Ahmad (2016) examined whether corporate governance affects dividend policy. The study collected sample of 115 firms from Indonesian capital market, Thailand capital market and Malaysian capital market for the period of 2005-2010 amounting to 575 observations. It was established by the ordinary least square regression approach in the study that good corporate governance practices has positive sign to dividend payout.

In Ghana, Adu-Boanyah, Ayentimi, and Frank (2017) examined the factors that affect dividend payout policy among some selected manufacturing firms. The study specifically examined how earnings per share, profitability, cash flow, sales growth, firm size related to dividend payout policy of the firms. The study used linear panel data regression methods to evaluate the factors for the period 1997-2006 and the results of the fixed effects estimator provided that dividend per share has a negative function of prior year's dividend and positively related to profitability and size of the firms while other variables were insignificantly related with dividend payout policy.

In Tunisia, Ahmadi (2018) studied how firm characteristics affect the choices of dividend payout of non-financial firms listed on the Tunisian Stock Exchange (TSE) during the period 2010-2015. The sample of the research comprised 168 observations firms/year, firm characteristics were proxies; firm performance, sales, firm value, firm growth and the study ran empirical model by using the static panel data technique which was based on least-square. The result of the analysis showed positive effects of firm performance, total of sales, firm value, and firm growth level on the dividend payout frequencies of the firms.

In India, Kumarand and Sujit (2018) examined the determinants of dividend trends of Indian firms with a sample of 31,234 firms represented fifteen (15) different industry sectors. The study used partial least square structural equation modelling methodology and tested different schemes of path models. The study reported that higher financial leverage lead to lower propensity for firm to pay dividend, firms with high intangibles are expected to have higher agency costs, and high growth firms have low dividend payout policies. In addition, the study reported that dividend intensity of firms is directly related to the size of firm, higher R&D intensity of a firm contributed to greater dividend intensity of the firms, firms with higher agency costs tend to have higher



dividend intensity, higher agency costs lead to lower cash flows for Indian firms, firms with higher liquidity tend to pay more dividends, and profitable firms tend to have higher dividend intensity.

Pinto and Rastogi (2019) examined whether a firm's dividends are influenced by the sector to which it belongs. The study also determined the explanatory factors for dividends across individual sectors. Longitudinal research design was adopted by the study and balanced data consisting of companies listed on the National Stock Exchange (NSE) of India for 12 years—from 2006 to 2017 were tested by pooled ordinary least squares regression estimation. It was established by the study that size, profitability, and interest coverage ratios have a significant positive relation to dividend policy, while business risk and debt are significantly negative related with dividends. The study also found evidence that dividend policies vary significantly across industrial sectors in India.

In South Korea, Lee and Lee (2019) examined the relation between a firm's research and development, R&D intensity and dividend payout policy and the study focused on biotech firms with a sample of 18,253 firm-year observations in South Korea. The regression result of the study established that biotech firms' R&D intensity is negatively related to dividend payout. Furthermore, the study found that for biotech firms, increased internal cash holding accomplished via a lower dividend policy is positively associated with long-term corporate value. The study particularly reported that the relation between biotech firms' cash holding and corporate firm value is significantly positive in firms with high stock dividends. Moreover, the study showed that non-biotech firms in the maturity stage of the corporate lifecycle tend to distribute cash dividends, a practice that was relatively uncommon among biotech firms in an R&D steady state.

In Nigeria, Uwugbe (2013) tested the determinants of dividends policy in the Nigerian Stock Exchange Market for the period 2006 to 2011. The study specifically tested how financial performance, firm size, debt ratio, board independence related to dividend payout policy. The study employed a judgmental sampling technique to select a sample of fifty (50) firms and the data was analysed with regression analysis approach. The study established that there is a significant positive relationship between firms' financial performance, size of firms and board independence and the dividend payouts decisions of listed firms in Nigeria.

Oladipupo and Okafor (2013) examined the influence of working capital management and corporate profitability on dividend payout ratio for twelve (12) manufacturing companies quoted on the Nigeria Stock Exchange over a five year period (2002 to 2006). The study used both the Pearson product moment correlation technique and ordinary least square (OLS) regression technique and reported that shorter net trade cycle and debt ratio contributed to high corporate profitability. While the level of leverage has negative significant impact on corporate profitability, the impact of working capital management on corporate profitability appeared to be statistically insignificant at 5% confidence level whereas it was showed by the study that dividend payout ratio was influenced positively by profitability and net trade cycle but negatively by growth rate in earnings. But the impacts of both corporate profitability and working management on the dividend payout ratio appear to be statistically insignificant at 5% confidence level.



Yusuf (2019) studied factors influencing dividend payout policy of firms and the study specifically examined how firm characteristics (proxies; profitability, firm size, business risk, financial leverage, liquidity, growth opportunities) influence dividend payout policy of firms listed on the Nigerian Stock Exchange for the period of thirteen (13) years ranging from 2002 to 2014. The regression result of the study provided that liquidity and growth opportunities are common predictors of dividend payout policy of the firms.

Gap in Research

A lot of work has been carried out in the area of the relationship between firm specific characteristics and dividend payout ratio. However, from the empirical literature reviewed above, it was observed that except the study done in South Korea by Lee and Lee (2019) and Kumar and Sujit (2018) in India, a commendable and robust empirical literature has not been indicated on the relationship between capital intensity, labour intensity, inventory intensity, R&D intensity, share price, and dividend payout ratio. This study therefore seeks to fill this gap by examining the relationship between firm specific characteristics on dividend payout ratio of quoted firms in Nigeria. It will bring out an in-depth understanding of the firm specific characteristics that influences dividend payout ratio like capital intensity, labour intensity, inventory intensity, R&D intensity and firm share price with specific interest in quoted companies in Nigeria.

METHODOLOGY

Basically, this study aims at investigating the relationship between firm specific characteristics on dividend payout ratio of quoted firms in Nigeria. To achieve this objective, an ex-post facto research design is adopted in this study. The justification of this design is that according to Udeh, Abiahu and Tambou (2017), it allowed the researchers to investigate what is already in existence in published financial statements. Therefore, historical data was obtained in this study from secondary source only in the annual reports and accounts of the sampled firms for a nine year period ranging from 2010 to 2018.

All firms that were quoted and traded their shares on the Nigerian Stock Exchange (NSE) as at December 31, 2018 formed the study's target population. To selected from the total population total of one hundred and sixty-nine (169) quoted firms in Nigeria, the study adopted filtration approach and the conditions that must be met by the firms are as follows: the firms must have published their annual reports and accounts as at December 31 of each year under study and the firms' financial statements must be audited. Considering these factors, the study adopted the purposive or selective sampling technique in its sampling process. After critically considering the various factors during the sampling process, the study arrived at a sample of one hundred and two (102) firms represented 60.36% of the total number of listed firms on the NSE. The annual reports of the firms comprised of the statement of comprehensive income statement, statement of financial



position, statement of cash flows, statement of changes in equity and notes to the accounts. These annual reports were obtained from the official website of the NSE.

The study employed both descriptive and inferential techniques of data analysis. In the descriptive technique of data analysis, the mean, standard deviation, minimum and maximum values of the study's variables were analysed whilst the Pooled Ordinary Least Square (POLS) estimation, fixed effect (FE) estimation, Random effect (RE) estimations and Hausman test were used as guides on the best estimation for interpretation of the result of the study. All the data analysis were conducted through the use of Eview version 9.0 statistical software package at an alpha (α) level of 5% ($p \leq 0.05$).

This study established the following regression equations to be used by the researchers to achieve the specified objectives:

$$IDP_{i,t} = \alpha_0 + \alpha_1 lCI_{i,t} + \alpha_2 lLI_{i,t} + \alpha_3 lInI_{i,t} + \alpha_4 lR\&DI_{i,t} + \alpha_5 lFSPI_{i,t} + \mu_t$$

in which DP is dividend payout ratio and it is calculated as dividend per share divided by earnings per share; CI is capital intensity and it is calculated as non-current assets divided by total assets; LI is labour intensity and it is calculated as multiplicative inverse root of number of employees; InI is inventory intensity and it is calculated as total inventory divided by total assets; $R\&DI$ is the research and development intensity and it is calculated as the amount the firm expends on the research and development of the workers; $FSPI$ is firm share price intensity and it is calculated as the current market price of shares of the firm. All variables are expressed in the study using the logarithmic operator (l) to obtain a normal distribution and interpretable results by dealing with outliers. IT is cross-sectional (i) at time (t), α_0 is constant term, α_1 - α_5 are the coefficients of the independent variables, μ_t is error term at time t in each model that is assumed to follow a normal distribution.

RESULTS AND DISCUSSIONS

Descriptive Statistics

Table 1 Summary of Statistics of the Variables

Variables	Mean	Min.	Max.	Std. Dev.	Obs.
<i>Ldp</i>	0.02	0.01	0.70	0.42	918
<i>Lci</i>	0.12	0.04	0.26	0.09	918
<i>Lli</i>	0.16	0.02	0.92	0.52	918
<i>lInI</i>	0.04	0.09	0.12	0.05	918
<i>lR&DI</i>	0.22	0.07	0.60	0.71	918
<i>lFSPI</i>	0.25	0.20	0.67	0.83	918

Source: Authors' computation (2020)

Table 1 above shows the summary of descriptive statistics of all variables over the period 2010–2018. The number of observations is 918 for the variables the mean value of IDP is 0.02 showing



that on average the dividend payout ratio return has by 2%, over the period 2010–2018. In addition, as describe by standard deviation, the result shows a significant variation in *IDP* 42% and the maximum and minimum value is 0.01 and 0.70 respectively. The mean value of *ICI*, *ILI*, *lInI*, *IR&DI*, *IFSPI* are 12%, 16% 4%, 22% and 25% respectively and for dispersion of 9%, 52% 5%, 71% and 83% respectively among the firms.

Correlation Analysis

Table 2 Correlation analysis

Variables	<i>IDP</i>	<i>ICI</i>	<i>ILI</i>	<i>lInI</i>	<i>IR&DI</i>	<i>IFSPI</i>	Tolerance	VIF
<i>IDP</i>	1.00							
<i>ICI</i>	0.52*	1.00					0.91	1.20
<i>ILI</i>	-0.32	-0.28	1.00				0.52	1.61
<i>lInI</i>	0.67*	0.32	0.29*	1.00			0.88	1.29
<i>IR&DI</i>	-0.25*	0.51*	-0.16	-0.31	1.00		0.49	1.65
<i>IFSPI</i>	0.49*	0.55	0.27	0.44*	0.49	1.00	0.68	1.55

Source: Authors' computation (2020)

Note: **p < 0.01,

*p < 0.05

Table 2 above reveals the results of the level of correlation between the variables and among the explanatory variables, *ICI*, *lInI* and *IFSPI* have positive and significant associations with the dividend payout ratio (*IDP*) at the 5% level. However, *ILI* and *IR&DI* were negative and significant with dividend payout ratio (*IDP*) at the 5% level. In addition, the Variance Inflation Factor (VIF) values of the explanatory variables are below numbers less than ten (10), suggesting that there is no multicollinearity between the independent variables.

Ordinary Least Square Regression Analysis

Table 3 Pooled Estimation Result (POLs)

Variables	Predicted Sign.	Coeff.	t-stat.	Prob.
C.		0.12	0.21	0.00*
<i>ICI</i>	-	-0.04	-0.43	0.37
<i>ILI</i>	-	-0.08	-0.32	0.00*



<i>lInI</i>	+	0.24	0.23	0.03*
<i>lR&DI</i>	-	-0.11	-0.07	0.00*
<i>lFSPI</i>	+	0.19	0.27	0.00*
<i>R-Sq.</i>			0.31	
<i>Adj R-sq.</i>			0.24	
<i>F-stat.</i>			21.1	
<i>Prob.</i>			0.03	
<i>Durbin-Watson stat.</i>			2.02	

Source: Authors' computation (2020)

Note: *p < 0.05

Table 4 Fixed Effect Estimation Result (FE)

<i>Variables</i>	<i>Predicted Sign.</i>	<i>Coeff.</i>	<i>t-stat.</i>	<i>Prob.</i>
<i>C.</i>		0.34	0.29	0.00*
<i>lCI</i>	-	0.04	0.43	0.00*
<i>lLI</i>	-	-0.72	-0.81	0.00*
<i>lInI</i>	+	-0.10	-0.29	0.00*
<i>lR&DI</i>	-	-0.27	-0.33	0.01*
<i>lFSPI</i>	+	0.23	0.15	0.00*
<i>R-Sq.</i>			0.37	
<i>Adj R-sq.</i>			0.31	
<i>F-stat.</i>			32.9	
<i>Prob.</i>			0.00	
<i>Durbin-Watson stat.</i>			1.95	

Source: Authors' computation (2020)

Note: *p < 0.05

Table 5 Random Effect Estimation Result (RE)

<i>Variables</i>	<i>Predicted Sign.</i>	<i>Coeff.</i>	<i>t-stat.</i>	<i>Prob.</i>
<i>C.</i>		0.45	0.51	0.00*



<i>ICI</i>	-	-0.23	-0.27	0.00*
<i>LI</i>	-	-0.26	-0.13	0.00*
<i>LI_{NI}</i>	+	0.22	0.09	0.00*
<i>LR&DI</i>	-	-0.29	-0.15	0.00*
<i>IFSPI</i>	+	0.39	0.24	0.00*
<i>R-Sq.</i>			0.33	
			0.27	
<i>Adj R-sq.</i>				
<i>F-stat.</i>			12.8	
<i>Prob.</i>			0.00	
<i>Durbin-Watson stat.</i>			2.04	

Source: Authors' computation (2020)

Note: *p < 0.05

Table 3, 4 and 5 above indicates the result of the POLS, FE and RE respectively. The interpretation of the result based on the POLS in the study depends on the result of the Restricted F-Test of Heterogeneity. The decision rule is based on the assumption that if the probability in the Restricted F-Test of Heterogeneity shows value greater than 0.05, the study will be interpreted based on the POLS, otherwise, either of the FE or RE will be justified to be used to interpret the result in the study.

Post-Estimation Test

Table 6 Summary of the Restricted F-Test of Heterogeneity

Model	F-Stat.	Prob.
1	5.22	0.000

Source: Authors' computation (2020)

The outcome of the summary of the restricted F-test from Table 6 provides that in the study, heterogeneity effect existed among the sampled firms suggesting that heterogeneity effect across firms is too significant to be ignored. Therefore, we conclude that there is no justification to interpret the results of the data analysed for the study on the basis of POLS estimation result.

Furthermore, either of the two models of FE or RE models would be considered for the interpretation of the regression result for the study on the assumption that if the outcome of the Hausman Test provides probability value less than 0.05, FE estimation result will be accepted or otherwise accept the RE estimation result for the study.

Table 7 Summary Result of Hausman Test for the Models

Model	Chi-sq. stat.	Prob.
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1

3.31

0.17

Source: Authors' computation (2020)

The outcome of Table 7 indicates that the Hausman Test provided a probability value greater than 0.05, thus, suggesting that the study is appropriate to be interpreted on the basis of the RE estimation result presented in the Table 5 above. Therefore, the RE estimation result in Table 5 above indicates that the explanatory (independent) variables inventory intensity (*lInI*) and firm share price intensity (*lFSPI*) exert positive and significant relationship with dividend payout ratio (*IDP*) and they are significant at the 5% level. However, capital intensity (*ICI*), labour intensity (*ILI*) and research and development intensity (*lR&DI*) exert negative and significant relationship with *IDP* and they are significant at the 5% level. The reported R-square value showed 0.33, meaning that 33% systematic variations in dividend payout ratio could be explained by the five measures of firm specific characteristics considered in this study. This indicates that there are more variables that explain dividend payout ratio other than the five measures of firm specific characteristics considered in this study. The F-statistics values showed that a significant linear relationship existed between the dependent and independent variables. Also, the result of Durbin-Watson statistic is very close to 2.00 suggesting absence of the problem of multicollinearity in the regression model. The model specified in the study as presented in section 3 of the study is shown below.

$$IDP_{i,t} = \alpha_0 + \alpha_1 ICI_{i,t} + \alpha_2 ILI_{i,t} + \alpha_3 lInI_{i,t} + \alpha_4 lR\&DI_{i,t} + \alpha_5 lFSPI_{i,t} + \mu_t$$

From Table 5, we have the following regression equation:

$$DP = 0.45 - 0.23CI - 0.26LI + 0.22InI - 0.29R\&DI + 0.39FSPI$$

Discussion of Findings

The RE estimation result in Table 5 above, first, shows that the relationship between firm specific characteristics (proxies, capital intensity) and dividend payout ratio of quoted firms on the Nigerian Stock Exchange was negative and significant with (*t-value*=-0.27) and coefficient (α_1 =-0.23), thus, implying that if capital intensity increased by one scale, it will reduce dividend payout ratio by 0.23 considering other explanatory variables hold constant. Thus, the null hypothesis (H_1) that the relationship between capital intensity and dividend payout ratio is significant should be accepted. The result is not at variance with the apriori significant negative relationship. In addition, this result collaborates bird-in-hand theory and dividend relevance theory that argue that dividend is relevant to the shareholders and that any activity that will affect the profit will also affect value of dividend that would be received by the shareholders.

Second, the relationship between firm specific characteristics (proxies, labour intensity) and dividend payout ratio of quoted firms on the Nigerian Stock Exchange was negative and significant with (*t-value*=-0.13) and coefficient (α_1 =-0.26), implying that if labour intensity increased by one scale, it will reduce dividend payout ratio by 0.26 considering other explanatory variables hold constant. Thus, the null hypothesis (H_1) that the relationship between labour intensity and dividend



payout ratio is significant should be accepted. The result is not at variance with the apriori significant negative relationship. In addition, this result collaborates bird-in-hand theory and dividend relevance theory that argue that dividend is relevant to the shareholders and that any activity that will affect the profit will also affect the value of dividend that would be received by the shareholders.

Third, the relationship between firm specific characteristics (proxies, inventory intensity) and dividend payout ratio of quoted firms on the Nigerian Stock Exchange was positive and significant with ($t\text{-value}=0.09$) and coefficient ($\alpha_1=0.22$), thus, implying that if inventory intensity increased by one scale, it will increase dividend payout ratio by 0.22 considering other explanatory variables hold constant. Thus, the null hypothesis (H_1) that the relationship between labour intensity and dividend payout ratio is significant should be accepted. The result is not at variance with the apriori significant positive relationship. In addition, this result collaborate with bird-in-hand theory and dividend relevance theory that argue that dividend is relevant to the shareholders and that any activity that will affect the profit will also affect the value of dividend that would be received by the shareholders.

Forth, the relationship between firm specific characteristics (proxies, R&D intensity) and dividend payout ratio of quoted firms on the Nigerian Stock Exchange was negative and significant with ($t\text{-value}=-0.15$) and coefficient ($\alpha_1=-0.29$), thus, implying that if R&D intensity increased by one scale, it will reduce dividend payout ratio by 0.29 considering other explanatory variables hold constant. Thus, the null hypothesis (H_1) that the relationship between R&D intensity and dividend payout ratio is significant should be accepted. The result is not at variance with the apriori significant negative relationship. In addition, the result corresponds with findings established by Lee and Lee (2019) but contradicts the finding indicated by Kumarand and Sujit (2018). Also, our finding collaborates the bird-in-hand theory and dividend relevance theory that argued that dividend is relevant to the shareholders and that any activity that will affect the profit will also affect the value of dividend that would be received by the shareholders.

Fifth, the relationship between firm specific characteristics (proxies, firm share price intensity) and dividend payout ratio of quoted firms on the Nigerian Stock Exchange was positive and significant with ($t\text{-value}=0.24$) and coefficient ($\alpha_1=0.39$), thus, implying that if firm share price intensity increased by one scale, it will increase dividend payout ratio by 0.39 considering other explanatory variables hold constant. Thus, the null hypothesis (H_1) that the relationship between firm share price intensity and dividend payout ratio is significant should be accepted. The result is not at variance with the apriori significant positive relationship. In addition, this result collaborate the bird-in-hand theory and dividend relevance theory that argue that dividend is relevant to the shareholders and that any activity that will affect the profit will also affect the value of dividend that would be received by the shareholders.

CONCLUSION AND RECOMMENDATIONS

This study examined the relationship between firm specific characteristics and dividend payout ratio of 102 firms listed on the Nigerian Stock Exchange between 2010 and 2018. Following the



empirical studies, dividend payout ratio variable was measurement by dividend per share divided by earnings per share. The study also used capital intensity, labour intensity, inventory intensity, R&D intensity and firm share price intensity as variables of firm specific characteristics.

First, we performed the descriptive statistics to enable us know the mean value and disparity among the firms over the period. The correlation analysis was carried out along with the variance inflation factor (VIF) to test the association between the variables and the multicollinearity of the variables. Second, to test the relationship, we employed the pooled ordinary least squares model (POLS), the fixed effects (FE) model and the random effects (RE). In addition, to select the best model among the POLS, the FE model and the RE model, the study carried out post-estimation tests which include the restricted F-test and test developed by Hausman (1978). Based on the tests, it was suggested that RE was the most suitable models for the interpretation of the results from the analysis performed. Overall, the results showed that the indicators of firm specific characteristics firm share price intensity and inventory intensity jointly had a significant positive relationship with the dividend payout ratio, while capital intensity, labour intensity and R&D intensity jointly had a significant negative relationship with the dividend payout ratio.

Hence, this study recommends that managers of Nigerian quoted firms should lower the amount of cash spent on capital intensity, labour intensity and R&D intensity so that the value of profitability will increase and the same time, dividend payout ratio will increase. In addition, inventory intensity and share price intensity of the firms should be maintained so as to continue paying good dividend to the shareholders that will lead the firm to achieve the shareholders' value maximisation objective.

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