

EMPIRICAL INVESTIGATION OF FIRMS' CHARACTERISTICS ON MARKET VALUE OF LISTED MANUFACTURING COMPANIES IN NIGERIA

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Abstract

This study was conducted to determine the influence of firms' specific characteristics on the market value of listed manufacturing companies in Nigeria. This was anchored on the fact that firms' specific characteristics usually reveal the efforts of managers in the performance of entities. The ex-post facto research design was adopted because the study was quantitative and required secondary data. The population of this study was fifty-six (56) manufacturing companies from four (4) sub-sectors-consumer goods, industrial goods, oil and gas and healthcare sub-sectors listed on the floor of Nigerian Exchange Group (NXG) as at 31st December, 2020. Forty-two (42) listed manufacturing entities were sampled for the study based on availability of data. Panel data were collected from the financial statements of the manufacturing companies sampled for the study. The variables of this study were Market Value (MV) and firms' specific characteristics. The dependent variable was firm's value measured by Tobin's Q and the independent variables, the firms' specific characteristics were Return on Assets (ROA) and Firm Size (FS). Inflation rate (IFR) was used as a control variable. Data were analyzed using descriptive statistics and multiple linear regression statistical tools. The fixed effect panel regression approach was adopted. From the analyses, it was revealed that ROA and FS had positive and significant

influence on MV of listed manufacturing companies in Nigeria. In line with the findings, it was concluded that firms' specific factors had positive and significant influence on value of listed manufacturing companies in Nigeria. Amongst others, it was recommended that non-current assets should be acquired and accumulated in listed manufacturing companies in Nigeria to raise the size of the entities.

Keywords: Firms' Characteristics, Market Value, Listed Manufacturing Companies in Nigeria and Panel Regression Approach.

1. INTRODUCTION

Manufacturing companies in Nigeria are seen as the drivers of economic growth and development. This is because of the role played by the sector in producing essential products, creating employment and improving the standard of living of individuals. According to Onuoha (2012) the manufacturing sector accounts for a significant share of every developing country's economy, Nigeria most especially. The benefits of providing employment, as well as essential products to consumers or buyers of Nigeria is made possible through continuous existence of the manufacturing entities. The continuous existence of these companies depends on how well the companies' value are improved and the growth in shareholders wealth. The capability to improve the value of companies is usually the responsibility of management of the entities. For these reasons, decisions are undertaken to attain the targets set. The various decisions often taken by management of companies is aimed at proper financial management and prudent resource application.

In the literature of finance and accounting, it has been ascertained by scholars that the objectives of financial management are profit and wealth maximization (Subanidja, Rajasa, Suharto & Atmanto, 2016). Profit maximization is the attainment of growth in profitability of a firm over years, while wealth maximization is simply an improvement in shareholders' value for the funds invested. To ascertain the extent to which profitability and shareholders' wealth are maximised, financial analyses of the entities' performance are of paramount importance. The ideas of financial analysis are embedded in financial accounting.

Both growth in profitability and shareholders wealth is made possible when the value of companies improves continuously and significantly (Sabrin, Takdir & Sujono, 2016). This indicates that the success of stakeholders of entities depends on the level of growth in value. It is always the growth in value of companies that keep the operation of the entities in perpetuity. It can be noted that the going concern status of firms solely anchored on the level of value generated by such entities. Value of entities, on the other hand, depends on the

characteristics of companies of which some are reported on the financial statements published by management of firms and others are found in an economic system of a country (Sucuahi & Cambarian, 2016). Those that are reported on the financial statements of companies are regarded as firms' specific characteristics (internal factors) and could be influenced by the policies and decision of managers of firms. Firms' specific attributes are referred to as factors that are within the control of management of entities (Suparno & Pitoyo, 2016). These specific characteristics include profitability, firm size, leverage, liquidity, revenue growth and asset growth.

Value of companies could be described as the level of growth achieved from the influence exerted by the internal attributes of entities and those that are not influenced by the policies of management (Arhin, 2018). In the computation of value of companies, some of the variables are extracted from statement of financial position of companies. Value of entities are usually computed using a model known as Tobin's Q and average of stock price of which the most recognised technique for measuring value is Tobin's Q (Sandoval, 2018). When certain factors of an entity increase in particular period of time, it is expected that value should also increase (Carini, Comincioli, Poddi & Vergalli, 2017). This is owing to the fact that higher improvement of factors like size and profitability could raise the value of companies in an accounting period.

Every management of listed manufacturing companies in Nigeria is always concerned about value maximization and as well as shareholders' wealth (Hirdinis, 2019). In order to raise the value of an entity, the key specific attributes must always be effectively managed. In other to maximize the wealth of a shareholders, profit must be maximized also (Ani & Odo, 2019). In as much as the determinants of profitability are examined, in the same vein, determinants of other variables such as value of companies can also be ascertained (Harsha, Nikitha, Madhura & Girish). In this regard, for there to be any improvement in value, other variable(s) must exert positive influence. It is on this note that the researchers are interested in examining the level of this influence of firms' specific attributes on market value of listed manufacturing companies in Nigeria.

Growth in market value of entities is very fundamental to both managers and shareholders of the companies. This is because it guarantees the survival of firms and improvement in shareholders' wealth. Improvement in value of companies is connected to how well firm's specific characteristics reported on financial statements of companies have been managed. This is because firms' specific attributes (internal factors) are within the control of management of companies. Several studies conducted both locally and internationally have shown the relevance of firms' characteristics on financial performance in

different companies and sectors. From the findings of the previous studies, certain factors have been recommended to entities for the purpose of improving profitability. Thus, in respect to value of entities in Nigeria, especially, listed manufacturing companies, previous studies have not examined some key specific factors like firm size and return on assets (ROA) that could influence the value of companies in Nigeria.

Previous studies carried out in Nigeria have examined the influence of firms' specific characteristics on firm value in various sectors. In manufacturing sector of Nigeria, it appears that the use of firm size as a proxy of firm characteristics is limited in spite of the influence that has been established in the literature between firm size and financial performance of firms by other inferential studies conducted outside Nigeria (Mbugua, Oluoch & Ndambiri, 2018). On this note, investigating firm size in relation to market value alongside other internal factors have become necessary because it could possibly explain the link between how well the management had utilized the firms' resources in generating corporate wealth and improve the market value of a firm. It is on this premise that the study is considered essential as an attempt to fill the gap in the literature by taking Tobin's Q as a measure of market value. The main objective of the study was to determine the influence of firms' specific characteristics on market value of listed manufacturing companies in Nigeria.

2. REVIEW OF RELATED LITERATURE

2.1 Conceptual Review

2.1.1 Market Value

Value of an entity could either be in form of book value or market value. Market value, as a concept, cut across many disciplines. This is because it is found in various field of study (Kumar, 2015). In pure science, there are different meaning of market value; in management science, there are diverse meaning of market value and in social science, there are also different views of market value (Suresh & Sengottaiyan, 2015). The focus of this study is on management views of market value of which accounting is one of the sub-fields of interest of management science.

According to Purwohandoko (2017), the market value of any entity is very crucial to the various stakeholders of the company. This is because of the fact that the two goals of financial management are profit maximization and wealth maximization. Both profit maximization and wealth maximization are two drivers that warrant the growth of market value of any company. This is to say that when there is any improvement in profitability of a company, the value of such company is certain to be improved as well.

Thus, firm characteristics could influence the value of companies either positively or negatively. This is because all the factors that constitute firm specific attributes do not have the same direction of influence on value. Value could be defined as the sum of the actual market value of shares of companies over a period (Shuaibu, Ali & Amin, 2019). The general objective or goal of a company is to raise the market value. Improvement in market value usually represent the prosperity of the owners who are the equity shareholders. The improvement in market value of a company is of focus to the investors. This simply means that the prosperity level of the investors is usually derivable from the standpoint of improvement in firm value. Also, firm value implies performance indicator to a manager of company. From the investor's perspective, firm value is associated with increase in stock price and as well as other attributes captured on the financial statement of companies (Harsha *et al.*, 2018).

Tobin's Q is a model propounded by a financial expert and statistician regarded as James Tobin in 1966. James Tobin formulated a model for calculating firm value in finance and this is why the formula regarded as Tobin's Q was name after the author. Before the formulation of the model and according to James Tobin, there was no reliable formula in finance for estimating the market value of companies (Pandey, 2010; Sucuahi & Cambarihan, 2016). This gave him the impetus to formulate a model known as Tobin's Q. According to the formula (model), firm value is calculated as market value of equity plus market value of debts divided by market value of assets.

The computation of Tobin's Q based on the market value of accounting attributes presented on financial statements of companies is possible when data on all the attributes such as market value of debt, market value of equity and market value of assets are available. For the fact that market value of debt and assets are usually difficult to ascertain, Tobin's Q model has been modified to calculate firm value as market value of equity plus book value of debt divided by book value of assets. This is because the market price of equity shares can easily be ascertained. Mathematically, it could be represented as: Tobin's $Q = \frac{MVE + BVD}{BVA}$, where MVE=Market Value of Equity, BVD=Book Value of Debt and BVA=Book Value of Assets.

According to the author (James Tobin), it has been stated that the higher the Tobin's Q, the greater the value of a company and vice-versa (Suresh & Sengottaiyan, 2015). Tobin's Q has been recognised as an idle model for the computation of value of companies. This is because in the computation of Tobin' Q all elements of statements of financial position are considered which are equity debts and assets. In the present study, Tobin's Q was the proxy for market value of quoted manufacturing companies in Nigeria because of the reasons stated above.

2.1.2 Firms' Characteristics

Firms' characteristics also known as firms' attributes, are factors that exist within and outside the operation of entities (Efuntade & Akinola, 2020; Jeroh, 2020). It could also be said to be those variables that usually affect the operations of entities directly or indirectly. From the definition given, it is clear that firms' attributes are broadly classified into two categories, and they are factors that affect the operation of entities directly or simply, those factors that operate within companies and those factors that exist outside the operations of entities.

Those factors that affect the operations of companies directly are referred to as firms' specific characteristics or internal factors and those that exist outside the operations of companies are referred to as external factors (Shuaibu *et al.*, 2019). Firms' specific factors are those attributes that are usually presented on the financial statements or disclosed in published annual reports of entities. Firms' specific factors can also be referred to as those components of financial statements that are required by regulatory authorities to present and disclose on companies' annual reports to assist the various stakeholders to make useful decision (Hirdinis, 2019). On the other hand, the external factors are those variables or attributes that exist outside the operation of companies but within the economic environment in which the entities operate or located (Muraina, 2018). For the fact that the concentration of the researchers of the present study is on the firms' specific attributes, the review was done on the internal factors more than the external factors as discussed below:

The following are the firms' characteristics reviewed:

i. Firm Size

Firm size refers to the speed and extent of growth that is ideal for a specific company. Most companies are committed to expand the size of their operation for the purpose of growth in revenue, profit, number of employees, or size of facilities. Many companies compete in rapidly changing industries, expansion of manufacturing capacity, geographical presence, market shares and so on which may be imperative for survival (Suparno & Pitoyo, 2016). Another strategy in retaining growth involves employing workers who like to work in a company. These workers tend to enjoy the diversity of the challenges they encountered in the company, and they often have a strong interest in the firm's products and can provide their expertise to customers.

One of the factors influencing firm size is the availability of workers and other resources in the surrounding community where an entity is operating. Firm size is a method used in positioning or rating of companies in an industry by those charged with governance or regulatory authorities.

When the size of the company increases, value of such entity is often expected to improve as well. This can be as a result where debt capital is not large in the company's capital structure. This implies that assets can be acquired on an account to be paid in a longer period of time. On maturity to pay for the assets purchased on an account, when retained earnings are used to settle the obligation, value of such entity is improved, firm size grows, and debt capital reduces, and the assets acquired is used to generate more revenue that can add to the shareholders' wealth. Increase in size can help a firm to undertake a capital-intensive investment that can yield adequate returns to the company. A lot of empirical studies have been conducted using firm size. Some of them used firm size as a control variable while others used it as a predictor variable in their studies. Firm size is used in this study as independent variable, because the study is on firm characteristics and value of the listed manufacturing companies in Nigeria.

ii. Profitability

One of the financial indicators that guarantee the existence of the listed companies in Nigeria is profitability. This is why all the strategies formulated by management of entities are channelled towards growth in profitability. In order to discuss in detail about profitability, it is fundamentally necessary to explain profit in the light of accounting (Suparno & Pitoyo, 2016). Profit is defined as the positive difference between selling price and cost price of a product or service. This is a simple way of understanding the meaning of profit. It is also the difference between revenue and various costs incurred. According to International Financial Reporting Standards (IFRSs), costs and expenses are used interchangeably. In preparing the statement of profit or loss account, the charges that constitute costs or expenses are cost of sales, administration expenses/costs, distribution costs, finance costs and income tax expenses.

Profitability is simply the measurement of success attained by companies in selling their products beyond the costs or expenses suffered (Rabiu, 2019). It can also be said to be the mark-up charged when selling the goods and services of companies. Profitability is the essence of establishing entities because of the fact that profit maximization is the expected returns of any company. Growth in profitability is the reason why strategies are formulated by management of companies. For the fact that profitability is the measurement of success accomplished by companies but however, it does not indicate the real financial status of entities because of some reasons which include the fact that non-cash items are often subtracted from the statement of profit or loss account in computation of accounting profits. The non-cash items often included in the computation of profits are depreciation, provision for bad debts, losses from disposal of assets and among others (Reschiwati, Syahdina & Handayani, 2019). This renders accounting profit impractical.

Growth in profitability is highly dependent on the level of growth in revenue. Also, for the purpose of achieving meaningful profits, the various costs and expenses are expected to be reduced to an acceptable minimum. Growth in profitability is usually expected to affect the value of companies positively and significantly. To achieve this, greater proportion of revenue generated by entities are anticipated to be in cash. For this reason, it can be stated vividly that the positive connection between profitability and value of companies is made possible by the level of positive growth in revenue where costs and expenses are kept as low as possible.

Profitability ratios of entities can be measured using different indicators such as gross profit margin, net profit margin, Returns on Assets (ROA), Returns on Equity (ROE) and Returns on Capital Employed (ROCE) and among others (Efuntade & Akinola, 2020). Gross profit is defined as the difference between revenue and cost of sales of an entity in an accounting period. Gross profit margin is calculated as total gross profits divided by total revenue in an accounting period. The gross profit margin ratio is a profitability ratio that connects all the stakeholders of a company together. Net profit is defined as the difference between revenue, cost of sales, administration expenses, distribution costs, finance costs and income taxes of an entity for a given period of time (Endri & Fathony, 2020). It is the profits that belong to equity shareholders of which the proportion are paid as dividends to preference shareholders or equity shareholders while some are retained for future growth of companies. NPM is calculated as profit for the year (profit after tax) divided by total revenue at a time. The NPM is financial performance indicator that relates to the equity shareholders of a company.

ROA is calculated as total profits after tax (profit for the year) divided by the total assets for an accounting period (Pandey, 2010; Hirdinis, 2019). This ratio measures the capability of the firm to generate profit by using its total assets. Thus, this ratio indicates how efficiently the assets of a company are employed to produce profits. The higher the ROA ratio, the better the company is using its own recourses and vice versa. This is because as more assets are acquired, it is expected that profitability should grow along with the trend of assets accumulated. When ROA is adopted as the proxy of profitability, it is believed that the total assets of the entity are key to revenue and profit generation of the company. The researchers intend to use ROA as one of the indicators of firm-specific characteristics because it is more concerned with the association between total profits and assets accumulated.

ROE is a ratio that shows how much profit a firm earned compared to the total amount of shareholders' total equity reported on the statement of financial

position for a period. ROE measures how far the equity stockholders' funds are used to generate revenue and profits over a period. A company that has a high return on equity is expected to be one that can generate revenue by effective utilization of equity shareholders' funds (Ayako & Wamalwa, 2015). The ROCE is computed as operating profits divided by total assets less current liabilities of a company for a period of time. The profits considered in computing the ROCE is after deducting distribution and administration expenses of an entity for an accounting period. The ROCE indicates how far an entity has been able to use shareholders' funds and long-term debt capital (non-current liabilities) to generate revenue and profits for a particular period (Suresh & Sengottaiyan, 2015).

iii. Inflation

The common among all the definitions of inflation is that inflation is the continuous increase in the general price level of goods and services in a country over a longer period (Ahuja, 2016). This simply implies that increment in prices of goods and services in a shorter period does not constitute inflation. For increase in prices of commodities to be called inflation, the changes in the prices must last for a longer period (Muraina, 2018).

This is because increment in prices of goods and services for a shorter period might not affect the economic parameters and economic units, such as the individual, firm and government, significantly. For instance, when there is price increase in goods and service in a short period of time, not all individuals or business units will be exposed to the changes in the price because some individuals might have purchased in larger quantity and stored for their needs. Some firms might have acquired their raw materials and the salaries of the employees are fixed already and there are no further expenses that can be affected by the short-term changes in prices (Pandey, 2010).

In a period of high inflation, the various cost of materials needed in companies' operations are expensive. For instance, as the costs are high, the purchases, carriages and among others are also high. In combining all these together for a period, the cost of sales must certainly rise and thus cutting down the profitability and value of that year. High inflation in an economy like Nigeria can affect financial performance and value of companies negatively because resources used by companies are purchased from the external environment that takes into consideration the economy situation of the country at a given period and the profitability of that period is affected negatively (Ahuja, 2016; Muraina, 2018).

2.2 Theoretical Review

2.2.1 Signaling Theory

This theory was developed and stated vividly by Spence (1973). Signalling theory is concerned with understanding why certain signals are reliable and others are not in terms of decision-making using accounting factors provided on published financial statements. The theory points at the quality and reliability of accounting information sent by entities to its users of accounting information for investment decision making. Spence (1973) suggested that a well performing firm distinguishes itself from the nonperforming one by sending a credible signal about its performance to capital markets and as well as potential investors.

Signals sent by a firm are the results of its operating activities which would inform investors about the company's prospects. The theory assumed that managers and shareholders of a company differ in terms of getting access to some vital information about firm operation. Some information can only be accessed by the managers while the shareholders do not have access to such information. The essence of this theory in this study is to support the influence of firms' characteristics represented by profitability and firm size on value of quoted manufacturing companies in Nigeria. This is because the quality of accounting information of an entity is reflected on the attributes such as profitability and firm size of the company (Spence, 1973; Fama, 1991).

Also, effective management would enable a company to maximize its profits and thereby leading to an improvement in firm's financial performance and market value which by implication is showing a good signal to both existing and potential investors that the company can continue to operate in line with the going concern status of accounting and as well as satisfying the interest of its stakeholders through wealth maximization.

This theory is related to the present study because firms' characteristics reported on financial statements of listed manufacturing companies usually sent signals of operation to the numerous investors. The signals are information that could guide both existing and potential investors in their decisions about investing activities. The argument of this theory is relevant to this study because it holds that accounting information sends signal to the market which influences the investment decisions. This decision is reflected in the price of shares, which is an element of market value of listed manufacturing entities. Thus, signaling theory is adopted in this study.

2.3 Empirical Review

Suparno & Pitoyo (2016) carried out a study on determinant factors of firm's value of manufacturing company in Indonesian Stock Exchange (ISE). The

focus of the researchers was to analyse and provide empirical evidence that the independent variable of dividend policy, manager share-owned, board size and profitability, both partially and simultaneously influence the value of the firm. The *ex-post facto* research design was employed in the study and the period of 2009 to 2014 was covered. The sample size was made up of one hundred and ten (110) companies quoted on the floor of Indonesian Stock Exchange (ISE) for the period chosen for the study. The purposive sampling technique was adopted in selecting the suitable sample size of one hundred and ten (110) manufacturing entities for the study. The data analysis done by statistical tests using multiple linear regression. The results showed that variable of declared dividend policy and profitability significantly affect the firm's value, while variable of manager share-owned and size of board did not affect the value of the firms studied. However, firm value simultaneously influenced by all the independent variables. It was concluded that the findings were interesting that the success of increasing the value of the firm depends on the firm's ability to optimally empower resources and as well as in implementing firm policies already set and not by a factor of the incentive manager.

Purwohandoko (2017) conducted a study to ascertain the influence of firm's size, growth, and profitability on firm value with capital structure as the mediator: A study on the agricultural firms listed in the Indonesian Stock Exchange (ISE). The purpose of the study was to examine the effect of size, growth and profitability on corporate value with capital structure as a mediator. This study was conducted on agricultural companies listed on the Indonesia Stock Exchange from 2011 to 2014. The population of the study was an agricultural company listed on the Indonesia Stock Exchange from the of period 2011 to 2014 with a sample of fourteen (14) companies, using purposive sampling method. Data were analysed using smartpal, because this research adds capital structure as mediator variable. The results of the study indicated that firm size and firm growth had no effect on firm value. Profitability negatively affects the capital structure.

Ceriawati & Endri (2018) examined the determinants of firm value: A case study of cigarette companies listed on the Indonesia Stock Exchange (ISE). The purpose of the study was to if there was any influence of capital structure, profitability, liquidity and market share on company value. The study covered the period of 2012 to 2016 and the population of the study were made up of four (4) companies listed on ISE. The purposive sampling technique was employed in the study in the selection of sample size for the study. The data for this study was analysed using descriptive statistics and multiple regression analytical tool. The outcomes of analysis indicated that capital structure and profitability had positive and significant influence on firm value. While liquidity had a negative and insignificant influence on value of the company. It was also found that market share had a positive but insignificant effect on firm value.

Ifada, Faisal, Ghozali & Udin (2019) carried out a study on company attributes and firm value: Evidence from companies listed on Jakarta Islamic index. The purpose of the study was to examine the effect of company attributes (dividend policy, capital structure and ownership concentration) on firm values. The sample comprised of fifty-six (56) companies listed on Jakarta Islamic Index. Smart-PLS program was used to analyse the data. The findings showed that ownership concentration and profitability had a positive effect on firm value. In contrast, liquidity had a negative effect on capital structure. Also, there was no relationship between profitability and capital structure. Finally, capital structure mediated the relationship between profitability, liquidity and firm value.

Rabiu (2019) empirically assessed the impact of firm attributes on share prices of listed industrial goods companies in Nigeria. The focus of the researcher was to empirically ascertain the influence of firm attributes on share prices of listed industrial goods companies in Nigeria. The published annual reports and accounts of listed industrial goods companies in Nigeria chosen for study for the period of ten years which ranged from 2007 to 2016. The collected data were analysed with the use of descriptive statistics, correlation and regression analysis. The outcome of the analysis indicated that profitability, board size and board gender exerted substantial and positive influence on share prices of listed companies in Nigeria studied. Managerial and institutional share ownership had material and undesirable impact on share prices of listed firms in Nigeria studied. It was therefore concluded, from the findings, that listed industrial goods companies with high profits and large board sizes that were highly gender diverse tend to have higher share prices than their counterparts.

Chabachib, Hersugondo, Ardiana & Pamungkas (2020) conducted a study on the analysis of company characteristics on firm values: Profitability as intervening variables. The purpose of the study was to analyse the factors that influence company value (PBV) in consumer goods companies listed on the Indonesia Stock Exchange (ISE). The study covered the period of 2014 to 2018 and the independent variables used in the study were capital structure (DER), company size (SIZE), liquidity (CR) with profitability (ROE) as an intervening variable. The purposive sampling technique was adopted in the selection of one hundred and twenty-eight (128) sample size for the study. The method used was path analysis which has to do with the development of multiple regression and bivariate analysis. The results of the analyses indicated that company size and liquidity had a positive and significant effect on firm value, the capital structure had a negative and insignificant effect on profitability. Profitability and company size had a positive and significant effect on firm value. Capital structure and liquidity had a positive and insignificant influence on firm value.

Endri & Fathony (2020) studied the determinants of firm's value: Evidence from financial industry. The purpose of the study was to estimate and analyse the effect of dividend policy, profitability, firm size, leverage, and growth on firm value in financial sector listed on Indonesia Stock Exchange (ISE). The study covered the period of 2013 to 2017 and Twenty-one (21) companies were drawn from the floor of ISE and sampled for the study and the relevant data in relation to the variables of the study were sourced from the financial statements of the entities chosen for the study. The results showed that firm size, leverage and growth did not have any significant effect on firm value in financial sector companies in the period 2013-2017. However, dividend policy and profitability proved to have significant positive effects on firm value in financial sector companies for the period 2013-2017. Jointly, it was ascertained that dividend policy, profitability, firm size, leverage and growth had some effects on firm value.

Jeroh (2020) studied corporate financial attributes and the value of listed financial service firms: The Nigerian evidence. The intention of the researcher was to investigate how corporate attributes of listed firms predicts the overall value of firms by drawing evidence from Nigeria. The *ex-post facto* research design was employed, and secondary data were collected for the period of 9-years (2010-2018) from the financial service companies of thirty-two (32) listed firms in the financial service subsector. The entire panel data for all variables were analysed by means of descriptive and inferential statistics. Empirical evidence from the analysis and hypothesis testing revealed that the selected corporate attributes in the study (return on assets, revenue growth, earning per share, leverage, company size and asset tangibility) exerted significant influence on two measures of firm value (share price and Tobin's Q); whereas no significant influence was found between the selected corporate attributes of firms and the third measure of firm value (share price to book value). Specifically, while return on assets and earnings per share recorded positive influence on all three measures of firm value and other predictors exerted both positive and negative influence on the three proxies of firm value. For instance, revenue growth and leverage had positive influence on Tobin's Q but exerted negative influence on share price and share price to book value.

2.3.1 Gap in the Literature

From the empirical literature reviewed, it was observed by the researchers that studies on influence of firms' characteristics and value of listed manufacturing companies in Nigeria with the variables of the present study were limited to the best of the researchers' view. For instance, in the study of Endri & Fathony (2020) financial companies quoted on the floor of Indonesia Stock Exchange (ISE) was considered in the study. The present study is different from other studies for the fact that the listed manufacturing entities used in this study were

made up of four-sub sectors such as consumer goods, industrial goods, oil and gas and healthcare companies whose shares are quoted on the floor of Nigerian Exchange Group (NXG). For these reasons, the present study would contribute to knowledge and add to the stock of literature in this area by considering the influence of factors such as return on assets (ROA) and firm size on value of the listed manufacturing companies in Nigeria.

3. METHODOLOGY

The *ex-post facto* research design technique was employed in this study because the study required secondary data obtainable from financial statements of the sampled manufacturing companies in Nigeria (Ary, Jacobs & Sorensen, 2010). The adoption of this research design enabled the researchers to examine the influence of firms' characteristics and value of listed manufacturing companies in Nigeria.

The population of the study was made up of the listed consumer goods companies, the listed industrial goods companies, quoted oil and gas firms and the listed healthcare entities in Nigeria. The listed consumer goods companies, industrial goods companies, oil and gas and healthcare entities in Nigeria as at 31st December, 2019 were twenty (20), thirteen (13), twelve (12) and eleven (11) respectively and made up the listed manufacturing companies on the floor of the Nigerian Exchange Group (NXG) considered by the researchers in this present study. In this case, the population of this study was fifty-six (56) listed manufacturing companies in Nigeria.

The sample size of this study was drawn from the total population of fifty-six (56) listed manufacturing companies in Nigeria on the floor of NXG. Forty-two (42) listed manufacturing companies were drawn and sampled for the study from the four sectors considered in the present study. According to Kothari & Garg (2014) fifty percent (50%) of population chosen as sample size is adequate to represent the entire population in an empirical study. The listed manufacturing companies included in the sample size were those with available data for the relevant variables of the study for the period chosen by the researchers presented on financial statements as single entities in International Financial Reporting Standards (IFRSs) formats published by management of the entities. The distribution of the sub-sectors included as sample size were fifteen (15), eleven (11), eight (8) and eight (8) for listed consumer goods companies, industrial goods entities, oil and gas companies and healthcare entities respectively.

The purposive sampling technique was used in the study. This enabled the researchers to draw a suitable sample size for the study by considering an

appropriate technique of selection (Ary *et al.*, 2010). In drawing the sample size, only those companies with well-presented financial statements as single entities and up to date available data were considered appropriate as samples for the study. The data for the study were obtained from the financial statements of the listed manufacturing companies in Nigeria. The sourced data collected from the annual reports of listed manufacturing companies were the ones obtained from their financial statements published based on the variables of the present study. The type of data used were panel data obtained from the year 2013 to 2019. The choice of the period was to capture only the published financial statements of listed manufacturing companies in Nigeria presented in IFRSs requirements.

The dependent variable of this study was market value (MV), and the independent variable was firms' characteristics decomposed into Return on Assets (ROA) and Firm Size (FS). From the variable description, the justification for the adoption of the linear regression technique in establishing the influence of independent variables on dependent variable was clearly seen.

Market Value (MV) was measured with a model known as Tobin's Q while Firms' Characteristics was broken into sub-variables as stated above. Inflation Rate (IFR) was chosen as a control variable of this study. This gave rise to the application of linear regression technique. The adapted empirical models were stated appropriately in line with the variables in each of the objectives of the study:

$$MV_{ij} = \beta_0 + \beta_1 ROA_{ij} + \beta_2 IFR_j + e_t \quad \text{Equation (3.1)}$$

$$Mv_{ij} = \beta_0 + \beta_1 FS_{ij} + \beta_2 IFR_j + e_t \quad \text{Equation (3.2)}$$

The relevant data collected in accordance with the respective variables of interest were analysed basically by descriptive statistics and multiple linear regression. Precisely, the panel regression approach was employed. All regression analyses were conducted based on 5% level of significance.

4. DATA ANALYSIS AND DISCUSSION

4.1 Data Analysis

4.1.1 Descriptive Statistics

The descriptive statistics of the data collected for this study was to enable the researchers to evaluate the nature of the dataset for each of the variables of interest. These were computed and presented on Table 4.1:

Table 4.1: Descriptive Statistics

Statistics	MV	ROA	FS	IFR
Mean	40.8328	0.03091	7.33203	0.11857
Median	6.47700	0.04100	7.45300	0.11400
Maximum	877.412	1.51000	9.26100	0.18600
Minimum	-14.2480	-1.79900	5.23900	0.08000
Std. Dev.	124.685	0.18035	0.88078	0.03660
Skewness	4.94708	-1.99846	-0.22192	0.66101
Kurtosis	28.9822	55.8439	2.34612	2.16796
Jarque-Bera	8985.74	32648.2	7.26039	28.3655
Probability	0.00000	0.00000	0.02651	0.00000
Sum	11392.3	8.62300	2045.64	33.0800
Sum Sq. Dev.	4321879	9.04268	215.666	0.37239
Observations	293	293	293	293

Source: Researchers' Computation (2023)

From Table 4.1, Market Value (MV) had mean of 40.833. This indicated that the average of MV for listed manufacturing companies in Nigeria during the period of this study was 40.833. The median of MV indicated the middle dataset of listed manufacturing companies in Nigeria during the period of study as 6.477. The maximum of MV indicated the highest data of manufacturing companies as 877.412. The minimum of MV showed that the lowest data of listed manufacturing companies in Nigeria during the period of study was -14.248. The standard deviation of MV indicated that the fluctuations from mean during the period of study for listed manufacturing companies in Nigeria was 124.685 and was high. The skewness of 4.947 indicated that the distribution of MV was positively skewed during the period of study. The kurtosis of 28.982 showed that the distribution for MV of listed manufacturing companies in Nigeria during the period of study was highly above normal curve. The Jarque-Bera statistics of 8985.74 compared with its probability value (p-value) of 0.0000 indicated that the dataset of MV was not normally distributed. The observations of two hundred and ninety-three (293) was obtained from multiplication of the number of listed manufacturing entities studied and the number of years considered in this study for MV.

From Table 4.1, Return on Assets (ROA) had mean of 0.0309. This indicated that the average of ROA for listed manufacturing companies in Nigeria during the period of this study was 0.0309. The median of ROA indicated the middle dataset of listed manufacturing companies in Nigeria during the period of study as 0.041. The maximum of ROA indicated the highest data of manufacturing companies as 1.5100. The minimum of ROA showed that the lowest data of listed manufacturing companies in Nigeria during the period of study was -1.7990. The standard deviation of ROA indicated that the fluctuations from mean during the period of study for listed manufacturing

companies in Nigeria was 0.18035 and was high. The skewness of -1.9985 indicated that the distribution of ROA was negatively skewed during the period of study. The kurtosis of 55.844 showed that the distribution for ROA of listed manufacturing companies in Nigeria during the period of study was highly above normal curve. The Jarque-Bera statistics of 32648.2 compared with its probability value (p-value) of 0.0000 indicated that the dataset of ROA was not normally distributed. The observations of two hundred and ninety-three (293) was obtained from multiplication of the number of listed manufacturing entities studied and the number of years considered in this study for ROA.

From Table 4.1, Firm Size (FS) had mean of 7.332. This indicated that the average of FS for listed manufacturing companies in Nigeria during the period of this study was 7.332. The median of FS indicated the middle dataset of listed manufacturing companies in Nigeria during the period of study as 7.453. The maximum of FS indicated the highest data of manufacturing companies as 9.2610. The minimum of FS showed that the lowest data of listed manufacturing companies in Nigeria during the period of study was 5.239. The standard deviation of FS indicated that the fluctuations from mean during the period of study for listed manufacturing companies in Nigeria was 0.8808 and was high. The skewness of -0.2219 indicated that the distribution of FS was negatively skewed during the period of study. The kurtosis of 2.3461 showed that the distribution for FS of listed manufacturing companies in Nigeria during the period of study was below normal curve. The Jarque-Bera statistics of 7.2604 compared with its probability value (p-value) of 0.02651 indicated that the dataset of FS was normally distributed. The observations of two hundred and ninety-three (293) was obtained from multiplication of the number of listed manufacturing entities studied and the number of years considered in this study for FS.

From Table 4.1, Inflation Rate (IFR) had mean of 0.1186. This indicated that the average for IFR during the period of this study was 0.1186. The median of IFR indicated the middle dataset during the period of study as 0.1140. The maximum of IFR indicated the highest data as 0.1860. The minimum of IFR showed that the lowest data during the period of study was 0.080. The standard deviation of IFR indicated that the fluctuations from mean during the period of study was 0.0366 and was high. The skewness of 0.6610 indicated that the distribution of IFR was positively skewed during the period of study. The kurtosis of 2.1680 showed that the distribution for IFR during the period of study was below normal curve. The Jarque-Bera statistics of 28.366 compared with its probability value (p-value) of 0.0000 indicated that the dataset of IFR was not normally distributed. The observations of two hundred and ninety-three (293) was obtained from multiplication of the number of listed manufacturing entities studied and the number of years considered in this study for IFR.

4.1.2 Test of Multicollinearity

The multicollinearity between the predictors (independent variables) were tested by the researchers using Variance Inflation Factor (VIF). The results computed were presented in Table 4.2:

Table 4.2: Test of Multicollinearity

Variable	Coefficient Variance	Uncentered VIF	Centered VIF
ROA	1945.043	1.325256	1.287316
FS	69.55775	77.45637	1.097959
IFR	37907.33	11.91518	1.033180
C	4625.493	94.45416	NA

Source: Researchers' Computation (2023)

From the results presented in Table 4.2, it was discovered that all the predictors had Centered VIF of less than ten (10). This indicated that the independent variables, including the control variable of IFR, had no problem of multicollinearity. In other word, it could be interpreted that the influence of individual independent variables on Market Value (MV) of listed manufacturing companies in Nigeria was not the same with another independent variable in the model.

4.1.3 Correlation Analysis

The correlation matrix for all the variables of this study were computed by the researchers to examine the coefficient of relationship among the factors. The results were presented in Table 4.3:

Table 4.3: Correlation Matrix

Correlation	FS	IFR	ROA	MV
FS	1.0000			
IFR	0.0337	1.0000		
ROA	0.2635	-0.0704	1.0000	
MV	0.3260	-0.0084	0.2364	1.0000
Probability	FS	IFR	ROA	MV
FS	----			
IFR	0.5747	----		
ROA	0.0000	0.2412	----	
MV	0.0000	0.8884	0.0001	----

Source: Researchers' Computation (2023)

From Table 4.3, the relationship between an independent variable and another independent variable was less than 60% (0.6). This indicated that there was no sign of multi-collinearity existing among the pairs of independent variables as presented on Table 4.2. The relationship between ROA and MV was 23.64%

(0.2364), the relationship between FS and MV was 32.60% (0.3260) and the relationship between IFR and MV was -0.844% (-0.00844).

4.1.4 Test of Hypotheses

4.1.4.1 Hypothesis One

The fixed effect regression results were computed by the researcher and presented in Table 4.4:

Table 4.4: Fixed Effect Regression Output

Variable	Coefficient	Std. Error	t-Statistic	Probability
C	42.17608	4.875440	8.6507	0.0000
ROA	10.31183	3.032592	3.4003	0.0007
IFR	-21.24496	39.09502	-0.5434	0.5873
Effects Specification				
Cross-section fixed (dummy variables)				
R-squared	0.965813			
Adjusted R-squared	0.959909			
F-statistic	163.5906	Durbin-Watson stat		2.0006
Prob(F-statistic)	0.000000			

Dependent Variable=MV

Source: Researchers' Computation (2023)

From Table 4.4, Return on Assets (ROA) had a positive and significant influence on Market Value (MV) of listed manufacturing companies in Nigeria. This was because the t-statistic and p-value indicated that ROA was significant on MV (t-stat.>1.966 and p-value<0.05). The ROA was in compliance with the *a priori* expectation stated by the researchers. A percentage increase in ROA brought about increase in MV of listed manufacturing companies in Nigeria. Inflation Rate (IFR) had a negative and insignificant influence on MV of listed manufacturing companies in Nigeria. The constant value of N42.18 showed the level of MV as ROA and IFR were held constant and was significant (t-stat.>1.966 and p-value<0.05). The Durbin-Watson (DW) statistic of 2.001 showed that there was no first order autocorrelation in the model.

R^2 indicated that 96.58% variation in MV was caused by the influence of ROA and IFR and Adjusted R^2 indicated that 95.99% variation in MV was attributed to the influence of ROA in the model. The F-statistic of 163.591 (prob.<0.05) indicated that R^2 and Adjusted R^2 were significant in explaining the model.

4.1.4.2 Hypothesis Two

The fixed effect regression results were computed by the researchers and presented in Table 4.5:

Table 4.5: Fixed Effect Regression Output

Variable	Coefficient	Std. Error	t-Statistic	Probability
C	19.02138	61.02310	0.311708	0.7555
FS	3.293233	1.398140	2.355439	0.0053
IFR	-27.39278	39.72821	-0.689505	0.4911
Effects Specification				
Cross-section fixed (dummy variables)				
R-squared	0.965655			
Adjusted R-squared	0.959724			
F-statistic	162.8127	Durbin-Watson stat		2.0084
Prob(F-statistic)	0.000000			

Dependent Variable=MV

Source: Researchers' Computation (2023)

From Table 4.5, Firm Size (FS) had a positive and significant influence on Market Value (MV) of listed manufacturing companies in Nigeria. This was because the t-statistic and p-value indicated that FS was significant on MV (t-stat.>1.966 and p-value<0.05). The FS was in compliance with the *a priori* expectation stated by the researchers. A percentage increase in FS brought about increase in MV of listed manufacturing companies in Nigeria. Inflation Rate (IFR) had a negative and insignificant influence on MV of listed manufacturing companies in Nigeria. The constant value of N19.02 showed the level of MV as FS and IFR were held constant and was insignificant (t-stat.<1.966 and p-value>0.05). The Durbin-Watson (DW) statistic of 2.008 showed that there was no first order autocorrelation in the model.

R^2 indicated that 96.57% variation in MV was caused by the influence of FS and IFR and Adjusted R^2 indicated that 95.97% variation in MV was attributed to the influence of FS in the model. The F-statistic of 162.81 (prob.<0.05) indicated that R^2 and Adjusted R^2 were significant in explaining the model.

4.2 Discussion of the Findings

From Table 4.4, Return on Assets (ROA) had a positive and significant influence on Market Value (MV) of listed manufacturing companies in Nigeria. This indicated that a percentage increase in ROA during the period of study resulted to a significant improvement in value of the entities studied. The result of the analysis in respect to ROA was in compliance with the *a priori* expectation stated by the researchers of the present study. When the effort of managers of entity is effective, profits are generated more. This is because in any accounting year, it is expected that profit is improved in a current year when compared with previous year. For profit to be improved meaningfully, expenses/costs are usually expected to be reduced by managers as revenue is growing higher.

Also, the competencies of managers are measured from the profit generated in an accounting year. This is because the responsibility of raising the value of companies and improving upon the shareholders' wealth rest on managers and for such obligations to be accomplished profitability must be maximized in such a way that market value of the entities is affected positively and significantly. This could be attributed to the present study where profit exerted a positive and significant influence on value of listed manufacturing companies in Nigeria. It could be stated vividly that during the period of this study, that managers of listed manufacturing companies in Nigeria have utilized assets acquired and accumulated to generate meaningful profit that was in connection with the value of the entities. It was in line with Suparno & Pitoyo (2016) who carried out a study on determinant factors of firm's value of manufacturing company in Indonesian Stock Exchange (ISE). This was in line with Ceriawati & Endri (2018) who examined the determinants of firm value: A case study of cigarette companies listed on the Indonesia Stock Exchange (ISE).

From Table 4.5, Firm size (FS) had a positive and significant influence on Market Value (MV) of listed manufacturing companies in Nigeria. This indicated that a percentage increase in size of assets during the period of study resulted to significant improvement in market value of the entities studied. The result of the analysis in respect to FS was in compliance with the *apriori* expectation stated by the researchers of this study. Firm Size is usually computed from the accumulated total assets of companies. In the composition of assets of entities, the proportion of the two components are very crucial. For instance, because of the direct influence between non-current and revenue, it is usually expected that the proportion of non-current assets acquired and accumulated should be higher than that of the non-current assets. Precisely, when managers of entities acquire more non-current assets, their targets are always on how revenue generated over the years could be improved significantly for the purpose of raising profitability. On the other hand, because of the trade-off relationship that usually exist between current assets and other attributes reported on financial statements of firms such as profit and revenue, lower proportion of current assets is expected to be maintained as liquid funds to which short-term maturing obligations could be settled.

In general, idle funds do not generate any returns and components of current assets constitute idle funds of firms when the rate of accumulation is high. From the outcome of the present study, it could be asserted that the proportion of non-current assets accumulated by managers of quoted manufacturing companies in Nigeria had been effectively managed and utilized in generating more revenue and as well as profits. Also, the proportion of non-current assets accumulated during the period of the study for the listed manufacturing

companies in Nigeria was higher than that of the current assets and this was the reason for the positive and material influence of firm size (FS) on market value of the listed manufacturing companies in Nigeria considered in the present study. This study was not in line with Purwohandoko (2017) who conducted a study to ascertain the influence of firm's size, growth, and profitability on firm value with capital structure as the mediator: A study on the agricultural firms listed in the Indonesian Stock Exchange (ISE). This was in line with Reschiwati *et al.* (2019) who conducted a study on effect of liquidity, profitability and size of companies on firm value.

5. CONCLUSION AND RECOMMENDATIONS

The study was conducted to ascertain the influence of firms' specific characteristics on market value of listed manufacturing companies in Nigeria. Data for the core variables were obtained and analyse using descriptive statistics and multiple linear regression. From the analyses done by the researchers, it was concluded that firms' specific characteristics had a significant influence on market value of listed manufacturing companies in Nigeria.

From the result of the analyses and in line with the independent variables of this study, the following recommendations were suggested:

- i. The various expenses/costs of the listed manufacturing companies in Nigeria should be reduced to raise return on assets.
- ii. The products of listed manufacturing companies in Nigeria should be advertised to the consumers for the purpose of raising more revenue and as well as return on assets.
- iii. Non-current assets should be acquired in listed manufacturing companies in Nigeria to raise the size of the entities.

Because of the scope of this study, the researchers could not cover the entire gap in the literature. For this reason, the following suggestions were made for the conduct of other studies:

- i. Firms' characteristics and market value of listed manufacturing companies in Nigeria should be studied by other researchers by considering both internal and external factors.
- ii. Firms' specific characteristics and market value of listed manufacturing companies in Nigeria should be investigated by other researchers with the use of other proxies for market value.
- iii. Firms' specific characteristics and market value of listed firms in Nigeria should be investigated.

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