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EFFECT OF MANAGERIAL EFFICIENCY ON CORPORATE FINANCIAL PERFORMANCE OF QUOTED NIGERIAN FIRMS

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ABSTRACT: *Managerial skills, performance and firm characteristics are vital in organizations as such, influence the financial performance of firms. Empirical studies have shown that management of firms have difficulties balancing short and long term results leading to corporate insolvency and loss of confidence by investors. This study examined managerial efficiency and corporate financial performance of quoted Nigerian firms. Ex-post facto design was adopted for the study. The population covered 169 quoted firms as at 31st December 2017. Data were analyzed using descriptive and inferential statistics. Findings revealed that ME has moderate explanatory power on variations in ROA ($F(5, 895)=1065.67$, Adj. $R^2=.1913$, $p<0.05$) but a weaker explanatory power on changes in Total Q ($F(5, 895)=37.61$, Adj. $R^2=.1085$, $p<0.05$). The study recommended that management of firms should strengthen their cost management strategies and apply cost-benefit analysis in their decisions for stakeholders' economic decisions.*

KEYWORDS: cost of production, debt equity ratio, life cycle, return on assets, total quality,

INTRODUCTION

Managerial and firm characteristics play key roles in the determination of financial performance of firms. In other words, the management of resources (men, machine, money and material) of firms and their evaluation strategies influences the firm's financial outcomes. It is generally believed that profitability as a measure of performance is germane to the growth and development of the economy and firms invest their internally generated revenue into capital equipment and/or research and development (R&D) as well as other innovative activities, with the aim of generating more profit which would, in the long run, lead to economic growth (Papadogonas, 2007).

However, the worldwide economic crisis that began in the second half of 2008 generated great difficulties which created a lot of disequilibrium in most countries, both developed and developing and the main reason for this crisis is that, management of firms focus more on the maximization of short-term results which are measured only in terms of one dimension of financial efficiency or financial performance, regardless of the consequences (Erbetta & Fraquelli, 2012). This led to long term losses which are usually, not manifest at the point of first result estimation and growth of mistrust on the market which in turn, decrease the desire of potential investors to risks (Bagautdinova, 2014; Svirina, 2013). This aligns with the assertion of Adebgie, Siyanbola and

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Olurin (2015) that the managerial capability to resolve financial crisis in a crisis ridden economy is a huge difficulty which has made several institutions to be liquidated and caused investors to lose their investments and confidence to invest more as responsibility accounting has been ignored.

In order to avert the current situation and restore public investors' confidence, the Securities and Exchange Commission (SEC) came up with some reforms such as: the capital market master plan, the National Investor Protection Fund (NIPF), the direct market access, electronic dividend payment, dematerialization of the share certificates and direct settlement payment as well as involving the government on some of the fiscal incentives to stabilize the market and encourage or attract domestic investors to the market so as to boost the market operations (Gwarzo, 2015). To buttress the fact that managers have effect on the choices of their firms and the performance thereof, Kandiel and Djerdjouri (2016) noted that, the size of the firm, its organizational structure, the number of employed managing partners, and the numbers of the business branches, tremendously affect the firm's operational efficiency in UK. On this note, Barros, Botti, Peypoch, and Solonandrasana (2011) asserted that performance analysis is a central issue of corporate governance, because in a competitive environment, a less efficient company generally fails to maintain a sufficient market share to survive in the market. Cosh, Fu and Hughes (2005) also affirmed that, the managerial characteristics and collaborative behavior of SMEs in UK have significant effect on their innovative efficiency and the most contributing factors to the firm's innovative efficiency are: collaboration, flexibility of the organization, management systems formality and incentive schemes.

Andreou, Philip and Robejsek (2016) also contend that higher ability managers create more liquidity and take more risk but, in a period of financial crisis, high ability bank managers reduce the creation of liquidity as a means of de-leveraging their statement of financial position. In the developing Asian economies, Li, Chiang, Choi and Man (2013), argue that efficiency of Hong-Kong contractors is linked with their managerial capability in controlling business costs and financial capability in controlling short-term and long-term capital liquidity while in Mainland China, the efficiency of the contractors is related with their managerial capability in controlling business and administrative costs but, not with financial capability to control capital liquidity. Epshtein (2005) projects a strong positive correlation between management quality and solvency of corporate farms in Russia. In the same vein, Jakada and Aliyu (2015) noted that managerial efficiency has a significant, positive influence on performance (ROA) of multinational corporations in Nigeria which is an indication that managerial efficiency is a key factor for business success.

This implies that businesses can fail if the management could not efficiently and effectively utilize the firm's financial resources which could lead to liquidity problems. This corroborates an excerpt from Ejike and Agha (2018) stating that, the choices that firms make concerning their operating liquidity policies affect their profitability thus failure to maintain an optimum operating liquidity could lead to insolvency of the firms or worst still, bankruptcy. According to ACCA global (n. d.), the most commonly accepted financial indicators/signals of imminent corporate failure are low

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profitability relating to assets and commitments; low equity returns (both dividend and capital), poor liquidity, high gearing and high variability of income.

In Nigeria for instance, Allafrica (2007) reports that 75 banks have been distressed and eventually collapsed since the advent of Nigerian banking in 1914, due to governance issues, that is, how they were managed. The report of Salako (2015) revealed that three (3) companies (Nigeria wire & Cable, Nigerian sewing machine manufacturing and Stokvis Nigeria Plc) have been delisted because their directors failed to re-structure their operations and enhance corporate governance as parts of the listing requirements of the stock exchange after the lapse of one year grace period to do so had been given. The performance of the said companies on the stock exchange was also noted thus: Nigeria wire and cable has been trading flat at its nominal value of 50kobo; Nigerian sewing machine manufacturing traded last at 15kobo which was less than its nominal value of 50 kobo by 70% while Skovis last traded at 14 kobo which was less than its nominal value of 50kobo by 72% (Salako, 2015).

Papadogonas (2007) observed that companies that are engaged in export activities experience more competitive pressure which could lead to low profit margins and performance of firms may be adversely affected by high debt levels due to an increase in the firm's risk level and low performance. In the same vein, Idolor and Agbadudu (2014) observed that Nigerian banking institutions, have experienced huge difficulties as a result of decisions concerning their investment quality, administration of loans and credit, management of liquidity and operations management which have affected their corporate existence and profitability, leading to bank distress, bank frauds, low profitability levels and reduced customer service delivery and satisfaction.Thus, Bagautdinova (2014) explained that shareholders tend to use economic indicators such as profitability and market share to measure management performance, however, such coefficients although, provide the overview of a company's performance, leave out strategic changes which might have been caused by managers who make decisions only in favor of short-term urgent growth. In essence, the management of firms experience difficulties in balancing short term and long term performance objectives as they mainly concentrate on short term performance measures (Deng & Smyth, 2013). Osazefua (2019) added that performance of firms in the stock market which is commonly measured by Tobin's q has been neglected by scholars in Nigeria when evaluating the effect of operational efficiency on long-term profitability of firms.

Furthermore, most organizations in Nigeria do not operate smoothly and efficiently despite our abundant natural resources and rich environment because, the management cadre which is essential for economic development is lacking and most times government has acted as the entrepreneur, performing the managerial functions and has as well failed, even more than private entrepreneurs (nairaproject.com). It has as well been observed that, the top ranked firms by revenue may not always be the top ranked firms by performance and a reduction in the current level of employees, assets and equity might lead to an increase in revenue and profitability (Hung & Lu, (2007). This could simply imply that a firm may be efficient but not effective or effective but, not efficient. Hence, all these may be termed as symptoms of corporate failure, revealing the strength or

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influence of managerial capability on the financial outcome of firms. However, despite the importance of this management role in the production function, little is known about the actual effect of changes in managerial skills on the firm's output, due to lack of proprietary data and difficulty in measuring meaningfully, the inputs and outputs of a complex production process leading to management bias (Porter & Scully, 1982; Marques & Barros, 2011). In other words, measuring managerial efficiency is one of the major problems in the contemporary world, which its importance came to limelight in the global economic crisis (Svirina, 2013; Jakada & Aliyu, 2015).

Prior studies for example, (Jakada & Aliyu, 2015) concentrated only on return on assets and total assets turnover as measures of managerial efficiency and financial performance respectively covering only 1995-2009 periods (the data used in the study was not current) but did not have theoretical back-up and neglected the stock market performance while Osazefua (2019) included the market performance but used Tobin's q as its measure which does not fully capture the totality of investment of firms in physical and non-physical assets. These studies also, failed to control for other factors (firm characteristics and managerial characteristics) that may influence managerial choices towards the financial outcomes of firms.

Therefore, considering the changes which occur in the business environment (internal and external), this study contributes to existing body of knowledge by investigating the effect of managerial efficiency [in terms of cost management (cost of production to sales and operating cost to sales); resource management-total asset turnover (sales/total assets); credit/risk management (debt to equity ratio) and working capital management (working capital turnover ratio)] on corporate financial performance (internal and external or stock market) of quoted firms in Nigeria. This therefore, addresses the problem of managerial efficiency measurement and presents a holistic measure of corporate financial performance of firms. In order to account for some firm-specific factors and managerial characteristics that may constrain the strategic choices of the management to improve corporate financial performance, this study controls controlling for the firm's size, its business cycle, tax payment efficiency and managerial compensation.

Hypotheses of the Study

The following hypotheses were tested in the study:

H_01**:** Firm size, its life cycle, tax payment efficiency, and managerial compensation have no significant controlling effect on managerial efficiency and return on assets (ROA) of quoted Nigerian firms.

H_02**:** Firm size, its life cycle, tax payment efficiency, and managerial compensation do not significantly control the effect of managerial efficiency on Total quality (Total Q) of quoted Nigerian firms.

The rest of this paper is organized as follows: section 2 reviews literatures related to this study, defines the key concepts and highlights the underpinning theories. Section 3 presents the

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methodology adopted in the study. In section 4, the empirical results and discussion of the findings are presented while section 5 concludes the study and makes recommendations for further studies.

LITERATURE REVIEW

Financial Performance

Financial performance of firms is a main feature which defines their competiveness, business potentials, economic interest of the management and present of future contractors (Dufera, 2010). Several factors determine the level of firms' performance (profitability) such as the size, ownership, capital structure, equity, age of the firm, experience, new investment in both physical and knowledge capital, managerial efficiency, growth in sales, export activity as well as the industry age (Ghebregiorgis & Atewerbrhan, 2016; Papadogonas, 2007). Measures of financial performance are essential elements of performance measurement and evaluation systems in most firms and whether managers should be held accountable for the cost of capital used in the generation of returns or not, is very significant in the choice of financial performance measures (Dekker, Groot, Schoute & Wiersma, 2012).

Shahzad and Sharfman (2015) measured financial performance with Tobin's q arguing that, it is a more "forward looking-looking performance measure which takes into account, all the potential growth opportunities. However, they used return on sales (ROS) which is the net income/sales and return on assets (ROA) to measure past financial performance as control variables. Martin (2011) also, adopted measures such as ROI and ROA while Gbebregiorgis and Atewerbrhan (2016) measured bank's performance based on profitability (return on assets-ROA, return on equity-ROE, yield on earning assets-YEA, rate paid on funds-RPF and net interest margin-NIM), risk (provision for losses and debt-assets ratio) and efficiency (non-interest income ratio, expense-income ratio and non-interest expense ratio).

Managerial Efficiency

The concept of efficiency or managerial efficiency has been used by researchers in various forms representing different but synonymous concepts such as, managerial capability, managerial ability, managerial performance, operations capability, operational efficiency, operational productivity, technical efficiency. This is because, the construct is multi-dimensional in nature and there is no agreed upon or generally accepted definition thereof. As such, Leverty and Grace (2012) defined managerial ability as the ability of the manager to efficiently marshal the firm's resources. Managerial efficiency is defined as the integrated skills of the entire top management team (Hambrick & Mason, 1984 & Jakada & Aliyu, 2015).

Demerjian, Lev, and McVay (2012); Demerjian, Lev, Lewis and McVay (2013) and Cho and Lee (2017) defined efficiency of management as the degree of management's ability to utilize a firm's resources (tangible and intangible) in generating revenue. In other words, their definition and measure of managerial ability focused on the revenue (output) generating ability of firms by estimated the total firm efficiency (TFE), indicating that efficient firms generate more revenue from

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a given set of inputs (assets) however, total firm efficiency (as estimated) is influenced by the manager and firm-specific characteristics thereby, decomposing TFE into managerial efficiency by regressing it on firm characteristics using Data Envelopment Analysis (DEA) as follows:

$Max_{\phi}\ \theta$ = (Sales). (ϕ_1Cost of Goods Sold + ϕ_2Selling, General and Administrative Expenses + ϕ_3Net Property, Plant and Equipment + ϕ_4Net Operating Lease + ϕ_5Net Research and Development cost + ϕ_6Purchased Goodwill + $\phi_7$other Intangible Assets)---------- (2.1)

This model tries to maximize the sales value (output) given the seven (7) items (inputs). However, because some of the managerial and firm-specific factors might affect the total firm efficiency, Demerjian *et al* (2012 and 2013) separated management specific factors from total firm efficiency by regressing the total firm efficiency score earlier obtained on six characteristics of the firm (size of the firm, its market share, cash availability, life cycle, firm's operational complexity or diversification and foreign operations) which might affect the total firm efficiency thus:

$Firm\ efficiency_{it} = \mathfrak{A} + \alpha_1 size_{it} + \alpha_2 market\ share_{it} + \alpha_3 free\ cash\ flow\ indicator_{it} + \alpha_4 ln(age)_{it} + \alpha_5 business\ segment\ concentration_{it} + \alpha_6 foreign\ currency\ indication_{it} + year\ indicator + \mu_{it}$ ----------(2.2)

Based on the above model, this study proposes or suggests an amendment to the widely adopted DEA model of Demerjian *et al* (2012 & 2013) to include profitability and market capitalization of firms as outputs instead of using only sales. This is because, in practice, all those inputs are utilized, not only to generate the sales figure but also, utilized in the generation of profits as well as to maintain the fund in the capital market (for quoted companies). Hence, the impact of those inputs (resources) adopted in those studies may be felt in revenue (sales), profitability and market capitalization. The inclusion or use of net profit as an output is consistent with (Hung & Lu, 2007) who argued that output is a concrete measure which reveals that a firm has achieved its objectives. The managerial efficiency measure using the proposed DEA model becomes:

$Max_{\phi}\ \theta$ = ($\mathfrak{A}_1$Sales + $\mathfrak{A}_2$Profitability + $\mathfrak{A}_3$Market capitalization). (ϕ_1Cost of Goods Sold + ϕ_2Selling, General and Administrative Expenses + ϕ_3Net Property, Plant and Equipment + ϕ_4Net Operating Lease + ϕ_5Net Research and Development cost + ϕ_6Purchased Goodwill + $\phi_7$other Intangible Assets) ---------- (2.3)

This can further be expressed in a formula adapted from Kusuma and Ayumardani (2016) as

$$ME = \frac{\sum i^{m}=1u^{y}}{\sum j^{n}=1v^{x}}$$

---------- (2.4)

Where: ME = managerial efficiency; u = output; y =number of output i in firms; v =input; x =number of inputs j

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It is noteworthy, however, that the input measures should be adapted to suit the case study which is our country, Nigeria.Therefore, the ability of the management to efficiently, utilize, handle, control or manage issues relating to cost and resources including risk and working capital in an attempt to optimally transform specific or certain inputs of the organization into output is referred to as the managerial efficiency in this study.

Return on Assets: This is a measure of the effectiveness/efficiency in the utilization of a company's assets to generate revenues. It is measured as net income/total assets.

Total Quality

Total quality (Total Q) is a new measure of financial performance (value) of firms developed by Peters and Taylor (2017) which combines both investment in physical (tangible) assets and intangible assets to arrive at the firm's value. The adoption of Total *Q* in this study lent credence from the study of Cho and Lee (2017) who argued that Total *Q* intends to overcome the shortcomings of Tobin's *Q*, which captures the value of a firm by the assessment of only the physical investment (property plant and equipment). Total Q recognizes investments in both physical (tangible) assets and non-physical (intangible) assets because, investors do not only react to current financial indicators but, to non-financial, long-term and forward-looking qualitative value indicators as well unlike Tobin's Q.

Managerial Efficiency and Financial Performance

Productivity and efficiency of firms depend on the manager's ability, skill and performance and managers play key roles in the attainment of best organizational performance (Hossan, Sarker & Afroze, 2012). Some excerpts in Leverty and Grace (2012) revealed that efficiency measures have direct relationships with market value performance of publicly traded insurers and a close link with traditional measures of performance (return on assets, return on equity and the expense ratio). Yet, it was noted that the characteristics of the management team may satisfy the conditions for achieving and maintaining competitive advantage thus, managerial skills when combined with other resources of the firm can jointly lead to efficiency (Jakada & Aliyu, 2015).

However, as affirmed in Hossan *et al* (2012), management quality is the most determinant of economic performance, indicating the significance of developing and acquiring good managerial skill for financial success and profitability. According to Andreou *et al* (2016), current literatures on managerial ability have revealed the importance of managerial ability on performance and/or superior quality reporting of industrial firms and banks alike but, not much empirical evidence on the above exist.

Therefore, they estimated such relationship using the following model:

$$PM_{jit} = \alpha+\beta MA_{i,t-1}+E_s z_{i,t}+\sum_{t=1}^{T}\theta_t d_t+v_i+E_{i,t} \quad \text{----------(2.5)}$$

Where PM_j is the performance measure j^{th} for jE (ROA, ROE), MA is the lagged managerial ability measure, d_t are the year dummies and Z represents the control variables (size-log of gross total assets, to account for differences in profitability as a result of bank size; cost efficiency to account

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of technological differences and allocation driving profitability; firm characteristics: status of the holding company, recent mergers and acquisition; local market characteristics: market share of medium and large banks, the log of bank-level population and population density and percentage of income growth rate).

Also, Angelopoulos and Georgopoulos (2015) observed that, in a period of crisis or adverse economic shocks, the positive value effect of income diversification is reversed and becomes intensified in the case of value premium of efficient cost management, thus, more able managers are expected to respond to such shocks better than lesser ability managers by de-leveraging (all things being equal). This means that, risks taken by such high ability managers have been reliably estimated ahead of time and requires not to be hidden from the stakeholders by perhaps, rolling over bad debts.

However, if firms could not create liquidity, they may still provide valuable service to the economy in order to transform risk (Andreou *et al*, 2016). They further assert that large banks have more quantities of risk-weighted assets in their books; are more risky in terms of distance to default and have greater variation of return on assets (return on asset volatility as a measure of risk) but, they (medium and large banks) tend to be more cost-efficient than small banks and they operate in more populous, affluent and less concentrated markets. In a nutshell, they found that risk has a negative effect on liquidity creation and banks with higher risk create more liquidity but, the effect of risk on liquidity creation is more significant for small banks.

Therefore, one can infer that more capable managers would take more risk and have a high ability or skill and confidence to manage such risk which would eventually, affect the corporate financial performance of their firms. In this vein, Jacobs, Kraude and Narayanan (2016) suggest that operational productivity leads to higher levels of financial performance and in the process, firms become more viable thereby, reducing their risk of bankruptcy; high financial performing firms are less likely to be leveraged which makes them to be exposed to lower risk level. To them, firms that can utilize minimal resources (number of employees, assets, inventory or other operational inputs) to generate higher sales are exposed to minimal level of risk when compared with firms that utilize more resources to generate the same level of sales. This is because, each unit of input utilized in the process of revenue generation is likely to involve some risk elements. Hence, they suggest that OP would have a strong and positive relationship with financial performance but a negative relationship with risk in a manufacturing setting.

Furthermore, Rizescu and Bucata (2017) noted that management is the most important factor in both the economy and efficiency of organizations which operate within the economy but, managerial performance is dependent on economic performance, commercial, technical and technological performances obtained in both the economy and organization's efficiency. This implies that, in this contemporary socio-economic condition of modern society development and unstable business environment, performance of enterprises is greatly determined by managerial efficiency, and organizations that devote considerable attention to managerial efficiency evaluation

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are more competitive, sustainable and have more opportunities to develop in various aspects (Cheymetova & Scherbakov, 2017).

Han, Nanda and Silveri (2016) indicated that, this is because, the consequences of managerial decisions are more critical in a competitive environment than in a more concentrated one where there may be room to accommodate error in decision making process, for instance, in a concentrated market, product differentiation or barriers to entry may protect firms from poor decisions unlike the firms that operate in a competitive market. On this note, Demerjian *et al* (2013) argued that all firms use capital, labor and innovative assets in their effort of revenue generation and high quality managers will generate higher rate of outputs from a given set of inputs through the application of superior business system processes (for example, supply chains and compensation systems) than lower quality managers).

This may be linked to the assertion of Beck and Harter (2014) that the selection of manager(s) is the most important decision companies make because, in about 82% of the selection/hiring time, companies fail to select the person with the right talent for the job which becomes problematic for employee engagement and development of high- performing culture in the U. S. and worldwide, costing companies billions of dollars per annum. Yet, another situation could be described as abnormal market functioning companies such as the energy supply industry which deals with unqualified personnel who does not pay much attention to customer care. This industry did not plan and was still profitable although, one-fourth (1/4) of their customers were not paying for the services provided as a result of government interference and support in the industry (Svirina, 2010).

In this vein, the study of Beck and Harter (2014) reveals that about one (1) in ten (10) persons have the management talent, another two (2) in ten, display some features of core managerial talent and if their companies can engage them in coaching activities or have developmental plans for them, they can perform at a very high level. This simply means that although, many of the managers have been endowed with certain managerial traits, only 10% of them actually possess the right/unique talent to engage team members in the job to achieve excellence and in the long-run, attain and sustain the organizational goal. Also, 20% of the manager's population can attain/sustain the organizational goal when they are couched. This shows the importance of training and development of the managers in the achievement of corporate performance. However, "experience and skills are germane but talents are inbuilt/innate and building blocks of excellent performance, unless we have the right innate talents for our job, no amount of training or experience would count because, knowledge, experience and skills develop our talents" (Beck & Harter, 2014). It is therefore, important that managers possess managerial talent so that when exposed to some level of training and experience in the job, would reflect such in the financial performance of their firms.

Managerial Efficiency and Return on Assets

Fiola and Ratnawati (2016) examined the impact of financial ratios (Capital Adequacy Ratio-CAR and Loan to Deposit Ratio-LDR), operational efficiency (operating expense to operating income BOPO) and Non-Performing Loan–NPL) on profitability (ROA) of twenty seven (27) commercial

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Banks listed on the Indonesian Stock Exchange for a period of three (3) years (2012-2014), using *ex-post facto* research design. The data were analyzed using multivariate analysis. The findings revealed that CAR, LDR, BOPO and NPL have a joint statistical significant impact on ROA of listed commercial banks in Indonesia however, only BOPO has a significant negative impact on ROA while CAR, LDR and NPL have no impact which implies that the banks are efficient in their operations as the operating income is more than operating expenses.

Jakada and Aliyu (2015) examined the impact of managerial efficiency (ME) on performance of nine (9) multinational corporations (MNCs) in Nigeria for a period of fifteen (15) years (1995-2009), using ex-post factor design. Secondary data were obtained in the study, which measured ME with total asset turnover (TAT) and performance with return on assets (ROA). Correlation analysis was carried out and the finding reveals that ME has a significant positive relationship with performance of MNCs in Nigeria. This may be as result of the firms' desire for excellence and the improvement on the level of development of the infrastructure in Nigeria. The study however, concludes that, in order to attract more MNCs, the operational environment in Nigeria and other developing countries need to be improved upon on a continuous basis.

In their study, Abubakar, Maishanu, Abubakar and Aliero (2018) examined the effect of financial leverage on financial performance of five (5) quoted conglomerate firms in Nigeria from 2005–2016 using *ex-post facto* research design. Financial leverage was measured by short-term debt ratio (STDR), long-term debt ratio (LTDR) and total debt equity ratio (TDER) while financial performance was proxied by Return on Assets (ROA). Multiple regression analysis was adopted in the study and the findings revealed a positive and significant effect of STDR on ROA and a negative but significant effect of LTDR and TDER on ROA, all at 1% significant levels. The study therefore, concluded that performance of quoted conglomerate firms in Nigeria could be improved by increasing the level of short-term debt in their capital structure.

Andreou, Philip and Robejsek (2016), investigated the impact of managerial ability (MA-lagged values) on banks' liquidity creation and risk taking behavior and the impact of managerial ability on performance (additional) of US banks from 1994 to 2010 making a 100, 976 bank – year observation, using ex-post facto design. The study estimated MA using stochastic frontier analysis (SFA) in order to make a comparison of managerial efficiency of banks with their peers in the industry, in the utilization of the firms resources to generate profit (economic value added), based on the idea of Demerjian *et al* (2012) who used revenue as their output. They utilized correlation and regression analysis in the study and controlled for size, holding company membership or status, risk, merger and acquisition history, local market competition (characteristics), economic environment, bank cost efficiency score and equity over asset ratio (EV). The findings show that ROA and ROE as well as shareholder value ratio (SHVR) are strongly and positively related with one-year lagged managerial ability. For the control variables, size and cost efficiency have negative impacts with profitability; banks operating in a more affluent, low market population density, with the presence of more medium and large banks, are likely to be more profitable than others; holding companies are also, more profitable than non-holding companies; mergers and acquisitions hamper

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the profitability of firms perhaps, because of the high cost incurred in the process of integrating the business before the actual benefits accrue or are realized.

In the study of Ashraf, Ahmad and Mehmood (2017), the effect of financial leverage on firm performance was investigated in ten (10) firms from the fuel and energy sector listed on the Karachi Stock Exchange. Financial leverage was proxied by debt to equity ratio (DER) debt ratio (DEBT) and equity ratio (Equity) while financial performance was measured by Return on equity (ROE), return on assets (ROA), net profit margin (NPM), earnings per share after tax (EPS) and return on capital employed (ROCE). The study adopted an *ex-post facto* research design and made use of correlation and regression analyses.

The findings show that DEBT had an inverse correlation with ROA, ROE, NPM, EPS, and ROCE; DER had an inverse correlation with ROA, ROE and EPS but a positive correlation with NPM and ROCE; Equity had a positive correlation with all the financial performance indicators except ROE. The findings further revealed that DEBT and equity had positive and no significant impact on ROA while DER was found to exact an inverse and significant relationship with ROA; DEBT had a positive relationship with ROE while DER had a significant inverse relationship and equity exerted an inverse insignificant relationship; DEBT and DER had insignificant positive relationships with NPM while equity had an inverse and insignificant relationship; DER exerted a positive and significant influence on EPS while DEBT and equity had insignificant negative impacts; DEBT had an insignificant inverse relationship with ROCE while DER had a significant positive relationship and equity exhibited an insignificant positive relationship.

Managerial Efficiency and Total Q

Gill, Singh, Mathur and Mand (2014) investigated the link between changes in operational efficiency and changes in future performance of two hundred and forty four (244) Indian manufacturing firms listed on the Bombay Stock Exchange from 2008-2012 using an *ex-post facto* research design. Changes in cash conversion cycle (ΔCCC), changes in operating expenses to sales revenue ratio (ΔOE_SR), changes in operating cash-flow (ΔOCF) and changes in total asset turnover (ΔTAT) were the measures of operational efficiency while changes in market price per share represented the future performance (ΔFP) of firms and changes in total debt/total asset ratio (ΔTDTA), changes in firm size (ΔFS) and changes in risk [standard deviation-operating risk (ΔSD)] served as the control variables. Correlation analysis was adopted in the study and the findings revealed that ΔCCC had an inverse relationship with ΔFP; ΔOE_SR had an inverse and sometimes, no relationship with ΔFP; ΔFP exerted a positive relationship with ΔOCF but no (although, positive sometimes) relationship with ΔTAT. For the control variables however, ΔFS and ΔSD have inverse relationships with ΔFP but ΔTDTA exerted a positive influence in all the models.

Cho and Lee (2017) examined the relationship between CSP (KLD scores) and CFP (total q) moderated by ME (DEA approach), using a sample of 11,037 firm-year observations (excluding

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financial institutions) from 2003 to 2011, by a means of secondary data, obtained from Compusat annual file and KLD data base. The study controlled for the performance of firms in accounting profits (ROA), mean value of annual buy-and-hold stock returns (M_RET), institutional ownership (INST),risk measures of leverage (LEV), annual standard deviation of daily stock returns (STD_RET) and size (using a lead lag approach). Regression and correlation analysis were conducted in the study and the DEA efficiency model was also utilized. The findings show that ME have a weak and positive relationship with total CSP level but, did not manifest a weak relationship with subsequent change in CSP. Also, the findings reveal that efficient managers are more likely to be involved in product-related corporate social responsibility-CSR, leading to CFP than environment – related CSR. Again, CSP has a positive relationship with CFP when such relationship is moderated with managerial efficiency.

Nwaobia, Alu and Olurin (2017) evaluated the effect of dividend payout ratio (POR) on share price (SHP) of five (5) quoted manufacturing (brewing, food/beverage and conglomerate) firms in Nigeria from 2006-2015 using *ex post facto* research design. The study controlled for earnings per share (EPS) and price earnings ratio (PER). Data were source from the annual audited financial statements of the firms being investigated and ordinary least square method by means of linear and multivariate analyses were adopted. The findings revealed a positive and insignificant effect of POR on SHP but a positive significant effect of EPS and PER on SHP. The main model showed an inverse relationship between POR and SHP while the effect of EPS and PER remained positive and significant. However, the inclusion of the control variables in the main model revealed that POR, EPS and PER jointly exerted a positive and significant effect on the SHP of quoted manufacturing firms in Nigeria.

Osazefua (2019) examined the impact of operational efficiency on financial sustainability of sixteen (16) quoted manufacturing firms in Nigeria for an eight (8) years period (2009-2016) using secondary data from the Bloomberg portal. Operational efficiency was measured with employee growth (EGR), operating expenses (OPX), account receivable turnover (ART), inventory turnover (IVT) and asset turnover (AST) while return on assets (ROA) and Tobin q (TBQ) were the financial sustainability surrogates. The study controlled for market capitalization (MKC), return on assets for previous year (ROA_{t-1}) and Tobin q for previous year (TBQ_{t-1}). *Ex-post facto* research design was employed in the study and the data analyzed by means of ordinary least square method (multivariate analyses). The findings revealed a negative and significant relationship between OPX and ROA, a positive and significant relationship between AST and ROA while EGR, ART, and IVT have no significant relationship with ROA. Furthermore, IVT and AST have positive and significant relationship with TBQ while OPX has a negative and significant relationship with TBQ but EGR and ART were not significantly related with TBQ. With the introduction of the control variables, MKC positively and significantly influenced ROA and TBQ; ROA_{t-1} had a significant relationship with ROA but not significant with TBQ; TBQ_{t-1} had a significant relationship with TBQ but no significant relationship with ROA. The study therefore, concluded that firms need to reduce their operating expenses and put in place, efficient strategies that could tackle the issue of inventory turnover and assets turnover.

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THEORETICAL FRAMEWORK

This study was anchored on the following theories:

Upper Echelon's Theory

This theory was propounded by Hambrick and Mason (1984). The upper echelons assume that organizations are reflections of their top managers (Martin, 2011). According to Andreou *et al* (2016), this theory stipulates that the complexity of the actual decision-making situations leads to an idiosyncratic importance of the top management team, and they observed that managerial ability has unique and more effect on firms' disclosure policies, accounting behaviors, and reporting quality than environment firm specific characteristics. The theory, states that, qualities and different background characteristics of managers of firms partly influence or affect the strategic outcomes or performance of firms, that is, determine the firm's strategic decisions (choices) and performance levels; in other words, organizational outcomes-both strategies and effectiveness are viewed as reflections of the values and cognitive bases of powerful actors in the organization (Hambrick, 2007; Hambrick & Mason, 1984). On this note, Cho and Lee (2017) argue that the CEOs or senior management teams' characteristics (tangible and intangible expert knowledge) are related with individual past experience, value and educational background which enable them to make efficient and valuable decisions.

Stakeholders' Theory

This theory was developed by Freeman (1984) who observed that the concept of stakeholder was first utilized in 1963 at Stanford Research Institute where it was viewed as a group which its support is needed by a firm to succeed, that is, without the support of the stakeholders, the firm ceases to exist. However, Freeman (1984) redefined the stakeholder concept to mean 'any group or individual who can affect or is affected by the achievement of the organization's objective'. This simply implies that stakeholders comprise of a variety of persons or individuals (including the shareholders) and the stakeholders' theory attempts to serve or protect the interest of these stakeholders. Hence, the focus of this theory is articulated in two core questions of what the purpose of a firm is. And what responsibility managers of firms have to stakeholders? The first question propels firms forward and allows them to generate outstanding performances (Freeman, Wicks & Parmer, 2004 in Alu & Akinwunmi, 2017). The second question pushes the managers to articulate how they want to do business and specifically the kind of relationships they want to create with their stakeholders. This theory also expects managers to develop and run their firms in a way that is consistent with the demands of the theory that is, stakeholders' value maximization rather than shareholder's value maximization.

Signaling Theory

This theory was propounded by Spence (1973) and the idea that, in a situation where information asymmetry exists, the well informed party sends a signal to the uninformed party, revealing some vital information to him which he/she (the uninformed) interprets to the best of his/her understanding thereby, making some behavioral adjustments, perhaps, in relation to purchasing

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power. From the financial reporting perspective, this theory, focused on the information disclosure behavior of managers in the presentation of their corporate reports. It is believed that managers of well performing firms tend to disclose the performance of the organization in their financial statements with greater transparency than managers of poorly performing firms (Nwaobia, 2015). Nyabundi (2013) suggests that earning's or dividend's announcements of firms equally send a signal to investors which could even, affect the share price of those firms. Thus, the level of disclosure or announcement in this case, sends a kind of signal of healthy and unhealthy firms to the stakeholders who view and use the financial statements.

METHODOLOGY

The descriptive *ex-post facto* design was adopted this study and a systematic disaggregated approach was as well employed. This implies that, the nature of the study variables and the relationship between and among them were fully described and secondary data sourced from the published annual reports of the sampled firms were utilized, as well as other relevant published sources. The use of systematic disaggregated approach which O'Shaughnessy, Gedajlovic and Reinmoller (2007) referred to as variance decomposition method enabled the separate examination of the effect of each aspect of managerial efficiency (CP/SL, OPC/SL, SL/TA, DER, and SL/WC) on corporate financial performance (ROA, and Total Q). This systematic disaggregated approach has been used by (Aggarwal 2013; Ching, Gerab & Toste, 2017; O'Shaughnessy, Gedajlovic & Reinmoller, 2007).

The population of the study consists of one hundred and sixty nine (169) quoted firms as at 31st December, 2017 out of which 90 firms were selected. Purposive sampling technique was adopted in the selection based on event criterion that is, based on availability of data, active trading and continuous listing of the firms over the study periods. The period of study is ten (10) years (2008-2017) and secondary data sources were utilized from the published, audited annual reports of the firms and other relevant published data concerning the firms under study because such sources enhanced the reliability and validity of the data used in the study which were analyzed using descriptive and inferential statistics, specifically, the multiples regression analyses.

The data was estimated using Unobserved Effects Model (UEM) which were either a fixed effect or a random effect depending on the assumptions about the distribution of the unobserved components and the error term, the stochastic process of the time series across companies (unit root processes) and the asymptotic properties of year (t) and company (i) because the data constitutes a panel data as it cuts across companies over several years and the choice of the UEM was based on Hausman test result and other diagnostic tests which were performed in accordance with the underlying assumptions of linear regression. According to Li, Chiang, Choi and Man, (2013), the Hauseman test examines a more efficient model against a less but, consistent results in order to ensure that the more efficient model would also produce consistent results; the null hypothesis states that the random-effect estimator coefficient is the same as that of the fixed-effect estimator, however, if the results are significant then, the fixed-effect model is selected, otherwise, the random-effect model is

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recommended. It is thus, expected that both models should produce the same/similar results if the panel data in consideration, constitutes a very long period.

Operationalization of Variables

Corporate financial performance was proxied by accounting-based measures such as return on assets (ROA) and market-based measures such as Total Q (TQ) while the firm's size (SZ), its life cycle (LC), tax payment efficiency (TPE) and managerial compensation (MC) served as the control variables so as to account for some firm-specific factors and managerial characteristics that may constrain the strategic choices of the management to improve corporate financial performance.

Return on Assets was calculated as Net Profit divided by Total Assets while Total Q was calculated as:

$$\text{Total Q} = \frac{V_{it}}{K^{phy}_{it} + K^{int}_{it}}$$

Where:

K^{phy}_{it} is the book value of property, plant and equipment and K^{int}_{it} is the book value of intangible assets while V_{it} is the market value of equity plus book value of debt minus current assets (Cho & Lee, 2017).

Control Variables

The control variables for this study are: firm's size, its life cycle, tax payment efficiency, and managerial compensation.

Firm Size

This is an indication of how large or small a firm is. It was measured by the natural logarithm of total assets. Jacobs *et al* (2016) and Andreou *et al* (2016) controlled for firm size based on the argument that bigger firms are likely to have economies of scale which could affect (positively or negatively) the links between OP, CSP, FP and risk. In Dekker, Groot, Shoute and Wiersma (2012), there is an argument that larger firms have higher agency costs due to higher risk of cross–subsidizing non-profitable units and consuming perks. Xu and Xi (2013) therefore, controlled for the size of the firm. Thus, controlling for firm size is necessary as larger firms might enjoy economics of scale which may likely enhance or reduce the relationship between and amongst the variables of study.

Life Cycle of the Firm

This is the actual number of years of a firm since the date of its incorporation. Arcelus, Melgarejo and Simon (2014) used age (lifecycle) as one of their independent variables arguing that, age of the firm could explain the differences in managerial performance measures.

Tax Payment Efficiency

This is a tax planning strategy which shows managers reduce the tax liability of their firms in a lawful manner. Efficiency of tax payment is defined in Kiswanto, Uli, Fachrurrozie and Retnoningrum (2016) as a process of tax planning used to detect theoretical flaw in the provisions of the legislation thereby, devising an efficient means or strategy of saving tax payments as a result

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of the theoretical defect. It is a means of streamlining the tax payable, by utilizing the tax provisions in order to minimize tax liability; it is counted through effective tax rate (ETR) and calculated as tax expense divided by profit before tax. ETR give the summary statistic of tax performance that describes the tax paid by firms in relation to their profit before tax (Nwaobia, Kwarbai & Ogundajo, 2016). Excerpts from Adegbie *et al* (2015) emphasized the need for firms to design their tax policies so as to attain efficiency in tax payment while avoiding tax evasion. In Kiswanto *et al* (2016), efficiency is said to be better if the comparison of cost with the realization achieved, gives a smaller value as follows: cost< 20% = very efficient; 20 %< cost< 85% = efficient; cost >85%= inefficient. In this study however, the management is efficient when the ETR is < the statutory tax rate of 30% depending on the sector (as small businesses and agri-businesses pay only 20%). Therefore, tax payment efficiency engagements are actions taken by corporate managers who are likely to be risk takers with the aim of reducing their corporate tax expense. In other words, tax payment efficiency increases with managers who are risk takers but decreases with risk adverse managers.

Managerial Compensation

This is the yearly remuneration of the managers of firms, logged in this study. Demerjian, Lev and McVay (2010) found that a strong relationship exists between efficiency and managers of publicly traded firms stating that, efficiency is directly linked to executive compensation, stock price performance of the firm and stock price reactions to managerial turnovers.

Model Specification

Y = f(X, Z)
Y = Dependent variable
X = Independent variable
Z = Control variables
Y = Corporate Financial Performance (CFP)
X = Managerial Efficiency (ME)
CFP = f (ME)
y_1 = Return on Assets (ROA)
y_2 = Total Quality (TQ)
X = Managerial Efficiency (ME)
x_1 = Cost of production to sales (CP/SL)
x_2 = Operating cost to sales (OPC/SL)
x_3= Total asset turnover (SL/TA)
x_4= Debt to equity ratio (DER)
x_5= Working capital turnover ratio (SL/WC)
Z = Control variables =
z_1 = firm size (SZ)
z_2 = Life cycle (LC)
z_3 = Tax payment efficiency (TPE)
z_4 = Managerial compensation (MC)

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Hence,

ROA = f (CPSL, OPCSL, SLTA, DER, SLWC, SZ, LC, TPE, lnMC) ---------- (3.1)

Total Q = f (CPSL, OPCSL, SLTA, DER, SLWC, SZ, LC, TPE, lnMC) ---------- (3.2)

$\mathbf{ROA}_{it} = \alpha_{it} + \beta_1 CPSL_{it}, + \beta_2\ OPCSL_{it}, + \beta_3 SLTA_{it}, + \beta_4 DER_{it} + \beta_5 SLWC_{it}, + \beta_6 SZ_{it} + \beta_7 LC_{it} + \beta_8 TPE_{it} + \beta_9 lnMC_{it} + \mu_{it}$ ---------- (3.3)

$\mathbf{Total\ Q}_{it} = \alpha_{it} + \beta_1 CPSL_{it}, + \beta_2\ OPCSL_{it}, + \beta_3 SLTA_{it}, + \beta_4 DER_{it} + \beta_5 SLWC_{it}, + \beta_6 SZ_{it} + \beta_7 LC_{it} + \beta_8 TPE_{it} + \beta_9 lnMC_{it} + \mu_{it}$ ---------- (3.4)

Where:
ROA_{it} = Return on Assets of firm i at time t,
Total Q_{it} = Total Quality of firm i at time t,
$CPSL_{it}$ = Cost of Production of firm to sales i at time t,
$OPCSL_{it}$ = Operating Cost to Sales of firm i at time t,
$SLTA_{it}$ = Sales to Total Assets of firm i at time t,
DER_{it} = Debt to Equity Ratio of firm i at time t,
$SLWC_{it}$ = Sales to Working Capital ratio of firm i at time t,
SZ_{it} = Size of firm i at time t,
LC_{it} = Life Cycle of firm i at time t,
TPE_{it} = Tax Payment Efficiency of firm i at time t,
$lnMC_{it}$ = Log of Managerial Compensations for firm i at time t,
α= Constant term/intercept
β_{1-9} = coefficients of the explanatory variables
μ_{it} = idiosyncratic errors/disturbances which absorb the effect of the omitted variables in the study.

ANALYSIS, FINDINGS AND DISCUSSION

Descriptive analysis

The descriptive analysis of the panel data obtained was carried out by means of numerical representation shown on table 4.1, which presents the mean, maximum, minimum, and standard deviation of all variables of Managerial Efficiency (ME) that is, Cost of Productions to Sales (CP/SL), Operating Costs to Sales (OPC/SL), Sales to Total Asset (SL/TA), Debt to Equity (DER), Working Capital Turnover Ratio (SL/WC) and Corporate Financial Performance (CFP) comprising of accounting-based or internal measures [Return on Assets (ROA)] and market or external-based measures [Total Quality (Total Q)] of the selected quoted firms in Nigeria for the chosen period of study (2008-2017).

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Table 4.1Descriptive Statistics

	Mean	Std. Dev.	Minimum	Maximum
ROA	0.0349222	0.1048538	-0.71	0.54
TQ	2.677569	6.913201	-12.02935	87.73461
TPE	-0.2177667	2.228484	-41.08	18.84
LC	24.22944	12.7809	1	53
CPSL	0.6076222	0.2432527	0.02	2.86
OPCSL	0.3625889	0.6993346	0.01	17.79
SLTA	0.8148962	0.6908258	0.0013777	5.428314
DER	0.079011	108.2431	-3123.06	754.37
SLWC	-8.480067	279.5967	-7849.63	609.37
SZ	16.86946	2.239281	11.73	22.45
MC	10.7383	1.755729	0	15.74

Source: Researcher's Study, 2019

From table 4.1, Return on Asset (ROA) series also showed a mean value of 0.0349222 and a standard deviation value of 0.1048538 which suggests no much volatility in this series. The minimum value for ROA also indicated that some companies actually made losses in some periods. Total Quality (TQ) also has a mean value of 2.677569 and standard deviation of 6.91301 with minimum and maximum values of -12.02935 and 87.73461 respectively. This shows that there is no much level of volatility in the data set. Cost of Productions to Sales (CP/SL) has a mean value of 0.6076222 and a standard deviation value of 0.2432527. This implied that there was no much volatility amongst the Cost of Productions to Sales (CP/SL) during the period studied. Operating Costs to Sales (OPC/SL) also showed a mean of 0.3625889 and a standard deviation of 0.6993346. This also indicated that there was no much volatility amongst the Operating Costs to Sales (OPC/SL) amongst the firms studied for the period covered in this study. Sale to Total Asset (SL/TA) has a mean value 0.8148962 and standard deviation of 0.6908258. This shows that there was no much volatility in the Sales to Total Asset (SL/TA) series. Debt to Equity ratio (DER) had a mean value and standard deviation value of 0.079011 and 108.2431 respectively, this is also a clear indication of a very high volatility amongst the Debt to Equity (DER) data set, which can also be seen in the difference between the minimum value (-3123.06) and maximum value of (754.37). Working Capital Turnover Ratio (SL/WC) has a mean value and standard deviation value of -8.480067 and 279.5967 respectively. The value of the standard deviation shows that there is a high level of volatility amongst this data set.

Size (SZ) also has a mean value of 16.86946 and a standard deviation value of 2.239281. The standard deviation value showed that there is no much volatility amongst the sizes of the firms selected for this study during the years studied. Life Cycle (LC) of the firms studied showed a mean value of 24.22944 with a standard deviation value of 12.7809 which shows that the life cycle of the firms are not all similar but cover a wide range. Tax Payment Efficiency (TPE) showed a mean value of -0.2177667 and a standard deviation of 2.228484. The standard deviation value of 2.228484 signifies the presence of volatility in the Tax Payment Efficiency (TPE) series.

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Managerial Compensation (MC) has mean and standard deviation values of 10.7383 and 1.755729 respectively. This showed that there is no much variations in the Managerial Compensation (MC) data set.

Empirical Analysis

The empirical evaluation of the hypotheses statements that

a. firm size, its life cycle, tax payment efficiency, and managerial compensation have no significant controlling effect on managerial efficiency and return on assets (ROA) of quoted firms in Nigeria and
b. firm size, its life cycle, tax payment efficiency, and managerial compensation do not significantly control the effect of managerial efficiency on Total quality (Total Q) of quoted firms in Nigeria, are shown on table 4.2 and 4.3 respectively, revealing the effect which managerial capability has on ROA and Total Q before and after the introduction of the control variables.

Table 4.2 Regression Analysis with Driscoll-Kraay standard errors for Model 3.1 & 2

Variable	**Without Control**			**With Control**		
	Coefficient	**t-Stat.**	**Prob.**	**Coefficient**	**t-Stat.**	**Prob.**
C	0.10	3.85	0.00	-0.30	-1.77	0.11
TAT	0.04	5.73	0.00	0.04	6.85	0.00
CPSL	-0.15	-3.20	0.01	-0.14	-2.94	0.02
OPCSL	-0.00	-0.29	0.78	-0.00	-0.18	0.87
SLWC	9.03	0.22	0.83	-7.17	-0.18	0.86
DER	7.56	0.45	0.66	0.00	0.72	0.49
SZ	-	-	-	0.03	2.87	0.02
LC	-	-	-	-0.00	-2.99	0.02
TPE	-	-	-	0.00	0.46	0.65
MC	-	-	-	-0.00	-0.07	0.95
R-squared	0.1871			0.1994		
Adjusted R-squared	0.1825			0.1913		
F-Statistic	12.64			1065.67		
Prob.(F-Stat)	0.00*			0.00*		
Diagnostic Tests	**Statistics**			**Statistics**		
Hausman test	19.08		0.00*	26.93		0.00*
Rho Statistics/ Multiplier	8.63		0.00*	8.64		0.00*
Pesaran's test of cross sectional independence	1.33		0.18	1.24		0.22
Heteroskedasticity test	77009.11		0.00*	82462.40		0.00*
Wooldridge test for autocorrelation	17.28		0.00*	16.78		0.00*

Dependent Variable: ROA; Obs.: 900 *significant at 5%

Source: Researcher's Computation, 2019

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Interpretation of diagnostic tests

The result of the diagnostic tests on table 4.2 showed that all the various tests are significant with probability values less than 5%. Specifically, the significance of hausman test shows that the null hypothesis to estimate random effect was accepted; as such the model was tested for the appropriateness of random effect using the testparm option on stata. The significance of the rho statistics at 5% shows that random effect is appropriate for this model. In addition, the Breusch-pagan heteroskedasticity test showed a p-value of 0.00 implying that the null hypothesis of constant variance was rejected and there is presence of heteroskedasticity. As such, if predictions are based on their regression estimates, would be biased and inconsistent. Furthermore, the Wooldridge test for autocorrelation is significant at 5% which implies that there is presence of first-order autocorrelation. This indicates that the residuals are correlated over time. As well, the Pesaran's test of cross sectional independence shows that the residuals are cross sectionally correlated at 5% level of significance.

RESULTS AND DISCUSSION

The result of the regression analysis on table 4.2 shows that managerial capability measured by TAT, SLWC and DER have positive effects on ROA. This is in tandem with expectation although, CPSL, and OPCSL exert negative effects on ROA. This is indicated by the signs of the coefficients, that is $\beta_1 = 0.04$; $\beta_2 = -0.15$, $\beta_3 = -0.00$, $\beta_4 = 9.03$, and $\beta_5 = 7.56$. Also, the size of the coefficient of the independent variable shows that a change in the managerial capability indices of firms can cause an increase or decrease in ROA as this is indicated by the coefficients of the variables discussed above. Likewise, the probability of the individual t-statistics shows that TAT and CPSL significantly affected the ROA at 5% significant level while OPCSL, SLWC and DER had not significantly affected ROA.

Additionally, the adjusted R-squared showed that about 18.25% variations in ROA are attributed to the measures of Managerial Efficiency while the remaining 81.75% variations in ROA are caused by other factors not included in this model. Hence, the coefficient of determination shows that the main model has a weak explanatory power on the changes on ROA. Furthermore the probability of the F-statistic of 0.00 shows that the regression result is statistically significant because, this is less than 5%, the level of significance adopted for this study.

The controlling influence of firm size, life cycle, tax payment efficiency and managerial compensation on the effect of managerial efficiency on ROA is evident in the change in the size and sign of the coefficients of the variables but has not affected the direction of the relationship. Specifically, ME proxies have a combined moderate, positive and statistically significant effect on ROA (18.25%) which even improved with the introduction of the control variables (19.13%). Thus, at the level of significance of 0.05, F-statistics of 12.64, and the p-value of 0.00, the null hypothesis that managerial efficiency has no significant effect on return on asset of firms in Nigeria is rejected. Therefore, managerial efficiency has significant effects on return on asset of Nigerian quoted firms.

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This result is in harmony with the findings of Jakada and Aliyu (2015) and Andreou *et al* (2016) whose studies revealed a strong, positive and significant relationship of ME on ROA as well as the study of Jacobs *et al* (2016) who found that OP has a strong and positive relationship with ROA. Furthermore, this study's findings are in consonance with that of Osazefua (2019) whose work revealed a positive and significant relationship between operational efficiency (asset turnover) and financial sustainability (ROA).

However, the findings of this study somehow differ from Osazefua (2019) findings which revealed an inverse but significant relationship between operational efficiency (operating expenses) and financial sustainability (ROA). Also, the findings of this study deviated from the findings of Fiola and Ratnawati (2016) whose study showed that operational efficiency (operating expense to operating income) has a negative and significant impact on ROA as well as Abubakar *et al* (2018) and Ashraf *et al* (2017) who found a negative and significant effect of ME (total debt equity ratio) on ROA.

Table 4.3 Regression Analysis with Driscoll-Kraay standard errors for Model 3.3 & 4

Variable	**Without Control**			**With Control**		
	Coefficient	**t-Stat.**	**Prob.**	**Coefficient**	**t-Stat.**	**Prob.**
C	0.46	0.21	0.84	13.34	1.68	0.13
TAT	2.98	6.84	0.00	4.55	2.83	0.02
CPSL	-1.10	-0.41	0.68	0.33	0.39	0.70
OPCSL	-0.34	-0.15	0.88	0.14	1.08	0.31
SLWC	0.00	1.96	0.50	0.00	0.60	0.56
DER	0.00	0.45	0.66	0.00	1.04	0.33
SZ	-	-	-	-0.82	-2.14	0.06
LC	-	-	-	-0.09	-1.37	0.20
TPE	-	-	-	-0.14	-2.85	0.02
MC	-	-	-	0.12	0.72	0.49
R-squared	0.0999			0.1175		
Adjusted R-squared	0.0949			0.1085		
F-Statistic	69.30			37.61		
Prob.(F-Stat)	0.0000			0.0000		
Diagnostic Tests	**Statistics**			**Statistics**		
Hausman test	5.83		0.32	16.69		0.03*
Rho Statistics/ Multiplier	863.93		0.00*	9.80		0.00*
Pesaran's test of cross sectional independence	12.72		0.00*	15.55		0.00*
Heteroskedasticity test	822.98		0.00*	8.6e+05		0.00*
Wooldridge test for autocorrelation	19.45		0.00*	19.11		0.00*

Dependent Variable: TQ; Obs.:900 ***significant at 5%**

Source: Researcher's Computation, 2019

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Interpretation of diagnostic tests

The result of the diagnostic tests on table 4.3 showed that all the various tests are significant with probability values less than 5%. Specifically, the significance of hausman test shows that the null hypothesis to estimate random effect was accepted; as such the model was tested for the appropriateness of random effect using the testparm option on stata. The significance of the TQ statistics at 5% shows that random effect is appropriate for this model. In addition, the Breusch-pagan heteroskedasticity test showed a p-value of 0.00 implying that the null hypothesis of constant variance was rejected and there is presence of heteroskedasticity. As such, if predictions are based on their regression estimates, would be biased and inconsistent. Furthermore, the Wooldridge test for autocorrelation is significant at 5% which implies that there is presence of first-order autocorrelation. This indicates that the residuals are correlated over time. As well, the Pesaran's test of cross sectional independence shows that the residuals are cross sectionally correlated at 5% level of significance.

RESULTS AND DISCUSSION

The result of the regression analysis on table 4.3 shows that managerial efficiency measured by TAT, SLWC and DER have positive effects on TQ. This is in tandem with *a priori* expectation although, CPSL and OPCSL, exert negative effects on TQ. This is indicated by the signs of the coefficients, that is $\beta_1 = 2.98$, $\beta_2 = -1.10$, $\beta_3 = -0.34$, $\beta_4 = 0.00$, and $\beta_5 = 0.00$. Also, the size of the coefficient of the independent variable shows that a change in the managerial capability indices of firms can cause an increase or decrease in TQ as this is indicated by the coefficients of the variables discussed above.

Likewise, the probability of the individual t-statistics shows that only TAT significantly affected the TQ at 5% significant level while CPSL, OPCSL, SLWC and DER had not significantly affected TQ. Additionally, the adjusted R-squared showed that about 9.49% variations in TQ is attributed to the measures of Managerial Efficiency while the remaining 90.51% variations in TQ are caused by other factors not included in this model. Hence, the coefficient of determination shows that the main model has a weak explanatory power on the changes on TQ. Furthermore the probability of the F-statistic of 0.0000 shows that the regression result is statistically significant because, this is less than 5%, the level of significance adopted for this study.

The controlling influence of firm size, life cycle, tax payment efficiency and managerial compensation on the effect of managerial efficiency on TQ is evident in the change in the size and sign of the coefficients of the variables but has not affected the direction of the relationship. In other words, when the control variables are introduced, all measures of ME exerted a positive and insignificant effect on Total Q except TAT whose influence remained statistically significant. However, the overall model revealed that ME had a positive and significant effect on Total Q. Although, the explanatory power is weak (9.49%), the direction of this relationship did not change with the introduction of the control variables but increased to 10.85%. Hence, at the level of significance of 0.05, and F-statistics of 69.30, the p-value of 0.0000, the null hypothesis that

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managerial efficiency has no significant effect on total Q of quoted firms in Nigeria is rejected. Therefore, managerial efficiency has significant effects on total Q of Nigerian quoted firms.

These findings are in line with the findings of Osazefua (2019) whose study revealed a positive and significant relationship between operational efficiency (asset turnover) and financial sustainability (Tobin's Q). The finding of Cho and Lee (2017) that ME has a positive moderating influence on CP (Total Q) corroborates with the findings of this study. The finding of Jacobs *et al* (2016) which revealed a weak positive relationship between OP and Tobin's q is also in line with the finding of this study.

Furthermore, the findings of this study are in harmony with the findings of Saranga and Nagpal (2015) who found that several factors determine operational efficiency which in turn, influence the performance of firms in the market. This study's finding is as well in tandem with the findings of Barros *et al* (2011) who discovered that efficiency of Portuguese hotels increased but, at a decreasing rate due to growth limits of internal market. However, the findings of this study somehow deviated from the findings of Gill *et al* (2014) whose study revealed an inverse and sometimes no relationship between changes in operational efficiency (change in operating expenses to sales revenue ratio) and future firm performance (changes in market price per share) and that Managerial effecincy (change in TAT) has no relationship (sometimes positive) with future firm performance (changes in market price per share). This study's findings also differ (somehow) from that of Osazefua (2019) whose study revealed a negative and significant relationship between operational efficiency (operating expenses) and financial sustainability (Tobin's q).

CONCLUSION AND RECOMMENDATIONS

Conclusion

The management of firms were capable in the deployment of resources including working capital and managing their credit/risk but not capable in the efficient management of costs which is evident in the enhancement and/or reduction of ROA as a result of the ME variables. ME proxies actually have a combined predictive power of 18.25% and 19.13% (without and with the control variables) over the changes which occur in the ROA of quoted firms in Nigeria. This indicates that efficiency of the management leads to enhanced performance of listed Nigerian firms. This also implies that firm size, its life cycle, tax payment efficiency and managerial compensation jointly control the effect of ME on ROA.

For Total Q, when the control variables are introduced, all the ME variables were efficiently managed as they increased the level of financial performance measured by Total Q (they move in the same direction) but without the control variables, costs (CPSL and OPCSL) were inefficiently managed such that the performance (Total Q) level reduced. However, the combined effect of ME measures on Total Q implies that, without the control variables, there is a 9.49% explanatory power of ME on CFP (Total Q) which increased to 10.85% with the introduction of control variables; the positive and significant relationship between the two variables imply that both variables increase or

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decrease in the same direction (ME enhances Total Q).Based on the foregoing, the study concluded that managerial capability significantly and positively influences the financial performance of Nigerian quoted firms and this influence is jointly controlled by firm size, firm life cycle, tax payment efficiency and managerial compensation.

Recommendation

The management of firms should improve or strengthen some areas of their efficiencies (especially cost management) which exerted an inverse effect on corporate financial performance even without the control variables while those which exerted positive influences on corporate financial performance should be closely monitored so as not to fall short or derail from the current standard instead of increasing it (there is always room for improvement); they should reduce costs without endangering the quality of products or services rendered by employing appropriate cost management techniques in order to enhance the level of financial performance of the firm; efficiency and effectiveness are inseparable and must be imbibed by every manager thus, the management of firms should engage in cost-benefit analysis before spending on any resource or project.

Furthermore, stakeholders should take cognizance of both short and long-run performances of firms rather than focus on the financial performance of firms in the short run alone and to incorporate market-based measures as well as control for firm's size, firm's life cycle and tax payment efficiency in their evaluation of corporate financial performance of firms; Regulatory authorities should encourage these firms by minimizing their costs of doing business and make the listing requirements to be attractive and not too cumbersome.

Suggestions for Further Studies

The study recommended that further studies may not control for managerial compensation when measuring corporate financial performance in relation to managerial efficiency but may consider other managerial characteristics not captured in this study such as the age, educational qualification, educational field, and work experience. This is because, amongst the control variables, only MC does not have any significant influence on CFP in both models; also, further studies should incorporate the value-based measures of performance for a holistic view of corporate financial performance of firms; future researchers may as well quantitatively measure managerial efficiency using the ratio of total assets to profit and the ratio of working capital to profit instead of sales used in this study or measure managerial efficiency with the improved DEA model suggested in this study.

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