FIRM VALUE AND ITS CHARACTERISTICS: EVIDENCE FROM LISTED HEALTHCARE ENTERPRISES IN NIGERIA

Hakeem Tomi Saliu[1]
Dare Joseph Enimola[2]
Nurudeen Yakubu Zakariya[3]

[1,2,3] Prince Abubakar Audu University, Anyigba, Nigeria

*Corresponding Email: saliuhakeemtomi@gmail.com

ABSTRACT

This study examined firm value sequel to the firm characteristics of listed Healthcare Enterprises within the Nigerian context. The goal is to determine how the selected firm characteristics influence value of Nigerian healthcare enterprises. Ex-post facto design was employed to conduct this study; and this involved the application of panel data. Two proxies represented firm value; share prices and Tobin's Q. Secondary data gathered from the annual financial reports of the 10 firms was analyzed using panel data regression. Firm size was found to have positive impact on the firm value of listed Enterprises in the Healthcare Sector of Nigeria. The study also discovered that liquidity had a negative substantial impact on the firm value, implying that having too much liquidity is detrimental to the firms' value. It was found that financial leverage has a significantly negative impact on firm value. The study recommended that Healthcare Enterprises' management should expand their investment portfolio in order to broaden their scope of operations. Healthcare Enterprises neither should create solid current asset management procedures to guarantee that inadequate nor are unneeded funds invested in current assets.

Keywords: Firm Characteristics, Firm Value, Healthcare Firm, Firm Size, Liquidity and Stock Firm Value, Operational Efficiency

INTRODUCTION

The importance of the healthcare industry to the overall economy's growth and development cannot be overstated. The health industry is vital to socio-economic development. There is sufficient evidence associating productivity to healthcare service. Nigeria's goal of becoming one of the world's top 20 economies by 2020 is inextricably linked to the growth of its human capital through the health sector (Troya et al., 2019). Aside from the ministries, departments, and parastatals of the federal, state, and local governments, the healthcare sector is among the industry in terms of labor

employment. With a capitalisation of 74.06 billion naira, it is also capital-intensive (NSE, 2013).

When it comes to investing in stocks, all investors, whether institutional or individual, have one goal in mind: to maximize projected return while maintaining a certain degree of risk. Researchers have attempted to explain business worth using a variety of data sources. Changes in economic and financial factors, for instance, are frequently used to explain the behavior of various stock markets around the world. The stock price should, according to signaling theory, reflect the expectation of corporate performance. This is because investors want to get more returns of their money by buying stocks in Healthcare Enterprises that make a lot of money. Furthermore, in both emerging and mature economies, the stock market has been a primary driver of economic growth and plays a crucial role in allocating economic resources to productive enterprises (Raja & Sudhahar, 2016).

The price of shares is influenced by both internal and external variables. 'Internal characteristics are also known as company characteristics, and this study's scope covers a lot of them. Many researchers have different ideas about what characterizes the concept of corporate firm characteristics'. Characteristics include firm growth, liquidity, size and interest coverage ratio, as well as investment opportunity, profit, risk, and tangibility. Firm age and size, cash flow, dividends, leverage, operating expenses, and internal governance mechanisms are among the others (Hassan & Ahmad, 2013; Abdullahi, 2015). As a result, variables containing business characteristics are selected based on the researchers' interests. External factors, on the other hand, are those that are mainly beyond the firm's control and are sometimes referred to as macroeconomic features. Economic growth (GDP), inflation (measured by the consumer price index), exchange rates, and monetary policy are among them. Time series examination about how these elements shape a firm's worth has been the focus of studies of macroeconomic variables.

In a free market economy, demand and supply decide the price of a commodity. The price of shares in the securities market, whether primary or secondary, is influenced considerably by a number of firm characteristics (factors) such as book value, dividend per share, earnings per share, price earnings ratio, and dividend cover (Somoye, Akintoye & Oseni, 2018). Sunde and Sanderson (2009) listed the elements that influence share price as company earnings, management strength, news of a lawsuit, mergers, takeovers, market liquidity, market stability, availability of substitutes, government policies, and more.

Features of a firm size and growth, operating efficiency, liquidity and leverage are some of the characteristics investigated in this research. This is because, despite the fact that these variables have been extensively studied in the past, inconsistent funding has

tainted the results of earlier studies. These disparities are mostly due to methodological discrepancies in sample size and study area, as well as the time period covered and analysis techniques used. Because the effect of company characteristics on firm value varies by sector, the conclusions of earlier studies in other sectors may not apply in our context. Given its strategic relevance to the economy, it is necessary to investigate the phenomenon in the context of Nigerian's Healthcare Enterprises.

Nigerian healthcare is a sub-sector of the manufacturing industry that deals with the production of drugs and laboratory equipment needed to provide excellent healthcare services. like other manufacturing Healthcare Enterprises, has experienced a tumultuous and difficult business environment, which has been exacerbated by the recent depreciation of the Naira against the US dollar. The fall in the value of the Naira causes a considerable increase in import expenditures for raw materials, the majority of which originates from Western countries'.

Because of the increase in production costs, which is reflected in the recent steep increase in drug prices, this has serious implications for product supply and demand. Because securities prices are set based on the existing and predicted business prospects, this could have an impact on the firm's value. The good news is that the current administration is concerned about the sector's poor performance, and one of the most visible efforts to correct this has been to make the dollar available to producers at all times. This is expected to boost investor confidence in the sector.

In previous Nigerian study, the impact of firm's characteristics on firm value in several industries was investigated. Despite the substantial association between operational efficiency and business values shown in the research by the other notable studies, the majority of studies did not employ operating efficiency as a proxy for firm attributes (Amarjit, Manjeet, Neil & Harvinder, 2014; Rahma & Farah, 2012; Baik, Chae, Choi & Farber, 2010; Dietrich, 2010). Investigating the operating efficiency of firms with respect to values is desirable because it illustrates the link between how successfully management used the business's resources to generate corporate wealth and, thus, corporate value. Prior studies that overlooked this issue, according to this study, were defective because operating efficiency is a direct indication of management's prowess and is fully under their control. As a result, it is assumed that the more efficient the management, the higher the firm's worth.

Similarly, studies (Ibrahim & Hussaini, 2015; Shehu 2017; Abdullahi 2016) concentrated on manufacturing, food & beverage and building materials industries, excluding Healthcare Enterprises, which are very important to the Nigerian economy. Healthcare is distinct from manufacturing industry. It is regulated by specialized agencies such as the National Agency for Food and Drug Administration and Control and the Nigerian Drug Law Enforcement Agency. Other industries are seldom applicable to the healthcare

industry due to differences in regulatory and business environment. This study was considered important since it attempted to solve these gaps in the literature. The healthcare sector is distinguished from the other sectors covered in earlier research by the fact that it is controlled by additional regulations and standards. This is a good reason why the sector should be studied separately from other industries. The study's specific objectives are to;

i. Assess how firm size affects the firm value of listed Healthcare Enterprises in Nigeria;

ii. Evaluate how liquidity affects the firm value of listed Healthcare Enterprises in Nigeria;

iii. Examine how operating efficiency affects the firm value of listed Healthcare Enterprises in Nigeria;

iv. Ascertain how firm growth affects the firm value of listed Healthcare Enterprises in Nigeria; and

v. Determine the impact of leverage on the firm value of Nigeria's listed Healthcare Enterprises.

LITERATURE REVIEW

Empirical Review

Liquidity, firm growth, firm size, operating efficiency, and leverage are all factors considered in this research. Empirical literature review focuses on how these variables have influenced industry value.

Safdar, Hazoor, Toheed, and Ammara (2013) conducted a study and used the State Bank of Pakistan's B-Recorder and Basic Balance Sheet Analysis to collect data from 307 non-financial Healthcare Enterprises listed on the Karachi Stock Exchange (KSE) from 2000 to 2012. Market capitalization (MC), sales growth (SG), and earnings per share (EPS) were the explanatory variables, while stock price was the observed variable. BY using the MC and SG (independent variables), Correlation matrix, multiple regression analysis, unit root test, and Granger Causality were applied for analysis of data. The results showed that MC and EPS had a positive significant impact on firm value, while sales growth had a positive insignificant impact.

Muneesh and Sanjay (2016) used data from the Indian Stock Exchange to investigate the relationship between firm characteristics and common stock values. From July 1989 to March 1999, the data includes monthly-adjusted share prices for 364 firms. The Healthcare Enterprises sample represents a significant portion of the Indian Stock

Market's market capitalisation and daily trading volume. The findings revealed that the size of a company has a positive significant impact on its stock price.

Nasrollah, Zahra, and Zahra (2018) investigate the relationship between business growth rate and performance. This study focused on a sample of 54 quoted companies on the Iran Financial Market from 2006 to 2009. The relationship between divergence of actual growth rate (AGR) from sustainable growth rate (SGR) and Return on Assets (ROA) were investigated using a linear regression analysis. According to the findings, growth rate has a positive and significant link with ROA.

Lan (2012) looked into how the size of a firm affects equity values. From 2005 through 2015, data was gathered from Aspect Financial Analysis. The sample included 54 observations of 153 stocks and was spread across ten industrial sectors. Market capitalization was used to determine the size of the company. The study's findings suggest that business size has a small but favorable impact on stock values.

Ulil, Bambang, Djumahir, and Gugus (2013) investigate the effects of firm factors such as size, age, profitability, and business growth on governance quality and firm value. The findings show that firm characteristics have a beneficial impact on governance quality, which affects firm value. Business features, implicitly, have a favorable and considerable impact on firm value.

Li-Ju and Shun (2011) investigated the impact of profitability on firm value using Taiwanese listed Healthcare Enterprises. They ended up with 647 samples after deleting the incomplete data, including 302 Healthcare Enterprises classified as pertaining to the electronic sector and 345 Healthcare Enterprises classified as relating to other industries. Profitability has a strong beneficial impact on business value, according to the findings. This means that the more profitable a company is the more valuable it is.

The study by Chrysovalantis, Iftekhar and Fotios (2013) investigated whether the capital market values the efficiency of firms. After tracing stock values and efficiency changes of 399 listed insurance firms in 52 countries during the 2002-2008 period, the paper reported a positive and statistically significant relationship between profit efficiency change and market adjusted stock values. Amarjit, Manjeet, Neil & Harvinder (2014) investigated the relationship between changes in operational efficiency and changes in future performance (value) of Indian manufacturing firms applying a correlational research design. A sample of 244 firms were selected from the top 500 Healthcare Enterprises listed on the Bombay Stock Exchange (BSE) for a period of five years (from

2008–2012). Findings showed that an increase in the cash conversion cycle has a negative impact on the future performance of the firms. A positive change in the total debt to total assets ratio improved the future performance of the Indian manufacturing firms'.

Hansen & Sungsuk (2013) investigated the influence of stock liquidity to firm value in Indonesian Stock Market, and reported that high liquidity firm can generate high operating profit. The study of liquidity is of importance to both internal and external users of accounting information, because of its relationship with the day-to-day operations of firms. Reheman & Nasr (2017) viewed liquidity management as a desired trade-off between liquidity and profitability of a firm.

In the study carried out by Owolabi & Obida (2012) on the relationship between liquidity management and corporate performance of listed manufacturing Healthcare Enterprises in Nigerian Stock Exchange for the period of 2005 to 2009, using a sample of 12 manufacturing firms. The result revealed a significant impact of liquidity management on corporate financial performance.

An empirical study was conducted on the 'impact of liquidity ratios on profitability of Pakistan oil and gas Healthcare Enterprises by Saleem and Rehman (2019). The results showed that there is significant impact of liquidity ratios on financial performance. The required liquidity for each company depends on the balance sheet situation of the firm (Saleem & Rehman). Velnampy & Niresh (2012) viewed liquidity ratio as realizable cash on the balance sheet to short term liabilities. Firms with fewer current assets will have problems to operate in line with the ongoing concern concept of accounting while if the current assets are too much, it shows that the value on investment for the company is not in perfect condition'. Qi, Subrananyam & Zhang (2010) stated that higher accounting quality is associated with higher liquidity, reducing the cost of debt as well as improving liquidity for future financial performance of company.

Theoretical Framework

Stewardship theory underpins this study. Stewardship theory assumes that managers whose behavior is aligned with the objectives of their principals are steward to their organizations. Donaldson and Davis (1991) viewed steward as a person who essentially wants to do a good job, be a good steward of the corporate assets and his role is seen as a caretaker or an individual for whom the prosperity of the firm is internalized as something good. The theory argues and looks at a different firm motivation for managers drawn from organizational theory. Managers are viewed as loyal to the

company and interested in achieving higher performance for the company. The major motive, which directs managers to accomplish their job, is their desire to perform excellently for the organization. Managers are conceived as being motivated by a need to achieve intrinsic satisfaction through successfully performing inherently challenging work, to exercise responsibility and authority thereby gaining recognition from peers and bosses'.

Stewardship theory has been structured as the organizational behavior counterbalance to rational action theories of management (Donaldson & Davis, 2019). This theory holds that there is no conflict of interest between managers and shareholders, and the goal of firm characteristics is to find the mechanisms and structure that facilitate the most effective coordination between the managers and the shareholders (Donaldson, 2013). The need for theoretical coherence and intellectual rigor in corporate governance research; reply to critics of Donaldson and Davis. The theory holds that there is no inherent problem of management control, meaning that organizational managers tend to be honest in their actions (Donaldson, 2013). The major assumption underlying the meaning of stewardship theory is that the behavior of the managers is aligned with the interests of the principals (shareholders). The theory places greater value on corporate goal among the parties involved in managing the affairs of the company than on the manager's personal interest (Van Slyke, 2006). The economic benefit for the shareholders in a principal-steward relationship results from lower transaction costs associated with the lower need for economic incentives and monitoring by the managers.

'A steward's utility function is maximized when the shareholders' wealth is maximized. The steward believed that the utility gained from interest alignment and collaborative behavior with the principal is higher than the utility obtained through personal interest and self-serving behavior of managers (Davis, Schoorman & Donaldson, 2015)'. Stewards are motivated by intrinsic rewards, such as good relationship and mission alignment, instead of solely extrinsic rewards. The steward, as opposed to agent, places more emphasis on achieving collective objectives rather than individual goals. 'The steward understands the success of the company as his own achievement. The stewardship theory is concerned mainly with identifying the situations in which the interests of the principal and the steward are aligned (Donaldson & Davis, 2019). Stewardship theory is of the assumption that becoming a steward or an agent is the result of a rational process'. In this rational process, the individual evaluates the advantages and disadvantages of one position and the other. There are contributions in stewardship literature that are of the view that stewards are not unselfish, but that there are some

situations where executives perceive that serving shareholders' interests also serve their own personal interest (Lane, Cannella & Lubatkin 2018). In this case, agents would recognize that the company's performance directly impacts positively on their individual performance as well as enable them to manage their own careers effectively (Daily, Dalton & Canella 2003). The theory proposed that stewardship relationships rely heavily on the trust and honesty developed between the principal and the managers through historical transaction. When the principal's relationships with the manager is characterized by honesty and trust, he is helping the manager to learn how to value the consequences of his decision towards firms performance and he may change his preferences and develop a good strategy that will be of great benefit to the company.

However, in a principal-steward relationship, 'the principal invests significantly in time to manage the relationship in a collectively interested manner. For the purpose of this study, the stewardship theory was adopted to underpin one of the firm characteristics variables proxied by operating efficiency, because in the stewardship relationship, the stewards focused more attention on the intrinsic rewards that are not easily quantified such as growth, goals attainment, recognition as well as the overall performance of company. In a principal-steward relationship, agency costs associated with the relationship is in the early stages of the relationship, while firm structural mechanism in stewardship relationship is an appropriate mechanism of controlling opportunism in the long run. The explanation here is that agency problems are not uniform throughout the life of a relationship; they are likely to occur at the early stage of the relationship. However, agency costs may decline rapidly as results of potential trust and increasing honesty among the parties. In the long run, there will be benefits associated with a principal-steward relationship, because there would not be costs associated with the reviewing of contract and strict monitoring controls. Such a cost reduction is not only beneficial to a company, but also to the steward, who benefits from a higher involvement in contract definition and less exposure to monitoring cost (Van-Slyke, 2006).

METHODOLOGY

In carrying out this study, 'a correlational and ex-post facto research design was used, because the study measures the relationship between firm characteristics and firm values of listed Healthcare Enterprises in Nigeria. These research designs are preferred when the goal is to establish cause and effect relationship usually using quantitative method. It is also useful in modelling positivist research paradigm where the study is assumed to be distinct from the researcher and the outcome of the research is free from bias and subjectivism'.

The population of this study consists of all the Healthcare Enterprises listed on the Nigerian Stock Exchange and have complete financial records on their websites or Nigerian Stock Exchange for the period of 2010 – 2018.   As at 31st December 2018, ten firms were listed and all the ten firms have their financial statements available either on their website or available at the Nigerian Stock Exchange throughout the study period. The study adopted census approach by studying all the firms.

'This study used secondary sources of data collection. The data were obtained from the annual reports and accounts of the ten (10) listed Healthcare Enterprises in Nigeria Stock Exchange (NSE) for the period 2010 to 2018. This documentary source of data was used because of the nature variables under study. The data on stock prices were obtained from the Website of the Nigerian Stock Exchange'.

In analyzing the data, both the inferential and descriptive statistics were adopted. Descriptive statistics was used to summarize the basic characteristics of the data. The statistics included mean, median, minimum and maximum. Also, correlation matrix was used to explain the relationship between each of the firm characteristics and firm value. Panel data regression was considered appropriate in view of the fact that it helps in establishing relationship, cause and effect between the variables. In order to determine the best choice of analysis technique, the study run three types of regression; Ordinary Least Square (OLS), Fixed Effect and Random Effect regression. All these method have various assumptions and conditions that must be fulfilled in order to achieve efficient estimates. However, the Hausman Specification test (either fixed effect or random effect regression) and Lagrangian Multpiplier Test (either random effect or OLS) decided the best techniques.

'Based on the results obtained, the random effect regression was considered most appropriate as the final technique of analysis. The random effect has the advantage of accounting for the panel effect in the data as opposed to OLS, which pools the data and treats it as if it were obtained from a single entity. In order to achieve reliability of the result, robustness tests like Multicolinearity test, Hausman test, Lagrangian multiplier test for random effect and Heteroscedasticity test were conducted. These tests are discussed in the robustness section (3.7)'

In order to achieve the objectives of this study and test of the hypotheses, a functional relationship in form of multiple linear regression model consisting of dependent and independent variables is formulated. The study employed two measures of firm value-

Stock price and Tobin's Q as dependent variables, which are regressed against the explanatory variables that comprise firm size (FSIZE), liquidity (LIQT), operating efficiency (OPEF), firm growth (FGRT), and leverage (LVRG). The two regression models are presented as follows;

$$SP_{it} = \beta_0 + \beta_1 FSIZE_{it} + \beta_2 LIQT_{it} + \beta_3 OPEFF_{it} + \beta_4 FGRT_{it} + \beta_5 LVRG_{it} + \varepsilon_{it} \ldots\ldots \quad 1$$

$$Tobin's \ Q_{it} = \beta_0 + \beta_1 FSIZE_{it} + \beta_2 LIQT_{it} + \beta_3 OPEFF_{it} + \beta_4 FGRT_{it} + \beta_5 LVRG_{it} + \varepsilon_{it} \ldots \quad 2$$

Variable Acronym	Variable Name	Variable Measurement and Source
SP	Stock Price	The quarterly average of the market price of shares of the firms (Maarof & Mahmud, 2016)
TQ	Tobin's Q	Market value of equity plus book value of preferred stock plus book value of total debt divided by the sum of book value of total assets (Sweety & Mandeep, 2014)
FSIZE	Firm Size	
LIQT	Liquidity	he ratio of firm's current assets to current liabilities (Owolabi & Obida, 2012)
OPEF	Operating Efficiency	Turnover divided by total assets (Mou & Wanrapee 2015)
FGRT	Firm Growth	Firm growth is measured as change in turnover (Mohammed & Usman, 2016).
LVRG	Leverage	Measured as the ratio of firm's total debt to equity (Salehi, Khazaei, & Tarighi, 2019)
β	Intercept	
ε	Error Term	
it	Firm i at time t	

Source: Compiled by the Author from Various Literature

Robustness

The following robustness tests were conducted in order to improve the validity of statistical results:

Multicollinearity test: The study adopted multiple regression models to ascertain the association among the firm characteristics variables. Where the association among the pairs of regressors are high, with coefficient above 0.80, there is strong indication that

multicolinearity exists. For that, the study tested for it, to see the   possibility of its existence or otherwise. This was done using variance inflation factor (VIF) and tolerance value.

Heteroskedasticity test: The study deals with observations that constitute different sizes, some are in decimal while others in units, and that heteroskedasticity sometimes occurs when there is a large difference among the sizes of observations. For that, the study had to run a heteroskedasticity test in order to see its existence or otherwise. It was done using Breusch-pagan/cook-weisberg test for heteroskedasticity. Hausman test: In view of the fact that both fixed and random effect tests were conducted. Hausman test was used to decide the best out of the two results. The test enabled the researcher to choose the most appropriate between the fixed and random effect models.

Lagrangian Multiplier (LM) test: The (LM) test help decide between a random effects regression and a simple Ordinary Least Square regression. The null hypothesis in the LM test is that variance across entities is zero. That is, no significant difference across units (i.e. no panel effect).

RESULTS AND DISCUSSION

This section analyses and statistically interprets the data collected for the study. The section begins with presentation and discussion of descriptive statistics and subsequently the result of correlation analysis. It then presents the regression results and discusses the findings in the light of previous studies. The section concludes with highlight of the policy implications of the findings'

Table 1: The descriptive statistics of the variables

Variables	Min	Max	Mean	Std Dev.
SP	0.500	69.000	7.053	12.168
Tobin's Q	0.550	1.200	0.961	0.159
FSIZE	8.650	10.850	9.520	0.456
LIQT	0.200	10.480	2.109	2.062
OPEFF	0.120	1.310	0.765	0.336
FGRT	4.610	9.670	8.148	0.959
LVRG	0.120	113.140	14.508	26.715

SOURCE: Extract from stata output

From Table 1, the minimum and maximum firm value are N0.5k and N69 respectively. Higher value on assets signifies better stock value while lower value on assets shows lower stock value. The mean share price is N7.05k, which signifies that the average share price of listed Healthcare Enterprises in Nigeria is N7.05k. The high standard deviation of

12.16 indicates that the data is widely dispersed from the mean suggesting that the firms in the sample have large difference in terms of their asset size. Firm value as measured by the Tobin's Q reveals and average of 0.961 with a standard deviation of 0.159. The minimum and maximum are 0.550 and 1.20 respectively.

Firm size shows an average value of 8.65 as represented by the natural logarithm of total assets. The low standard deviation as compared with the mean shows that there is no much variation in total assets of the firms that constitutes the study sample. This is further confirmed by the minimum and maximum firm size that is 8.65 and 10.85 respectively. The firms" liquidity shows average values of 0.21 indicating that near cash assets constitute 21% of the current liabilities, which suggests low liquidity of the sector. There is no much variation of liquidity across the firms as indicated by standard deviation of 2.06. However, the minimum and maximum of 0.21 and 10.48 respectively suggests disparity in the liquidity behavior of these firms'.

Further, the operating efficiency of the firms shows minimum and maximum of 12% and 13% respectively. These mean that the turnover-total assets ratio is considerably high in the sector. This can be further observed from the average of 76%. The low standard deviation indicates that the data clustered around the mean. As regards firm growth, the result shows an average of 8.15 and a standard deviation of 0. 959 indicating that the Healthcare Enterprises grew by 8% during the period under review. The minimum of 1.3 indicates that the growth in terms of turnover does not fall below 1%, which further indicates absence of decline in turnover across individual periods. Lastly, the Table show mean leverage of 14.50 and standard deviation of 26.71 indicating that the firms employed more of debt than equity to finance their operations. The large difference between the mean and standard deviation suggests that there is considerable difference in the use of debt financing across the firms. This is also evident from the minimum and maximum of 0.12 and 113.14 respectively.

The correlation matrix explains the nature of relationship between the dependent and independent variables of the study as well as the independent variables among themselves. The summary of the associations among the variables of the study is presented in Table 2.

Table 2 correlation matrix

Variable	SP	Tobin's Q	FSIZ	LIQT	OPEFF	FGRT	LVRG
SP	1						
Tobin's Q	-0.0185	1					
FSIZ	0.5190*	-0.2271*	1				
LIQT	-0.2000	-0.2789*	0.0549	1			
OPEFF	0.0753	-0.1724	0.2417*	0.1943	1	`	
FGRT	0.3115*	-0.0536	0.3001*	-0.2833*	0.0457	1	
LVRG	0.3933*	-0.2310*	0.4128	-0.2800*	0.0343	0.3017*	1

SOURCE: Stata Output

The table shows that firm size, operating efficiency and firm growth are positively and strongly correlated with share price, with respective correlation coefficients of 0.5190, 0.3115 and 0.3933. While leverage has positive correlation with stock price but the relationship is the weakest as indicated by the coefficients and level of significance. The table also shows that liquidity is negatively correlated with firm value significantly at 10%.

Regarding the Tobin's Q, the result shows that all the variables have inverse correlation with firm value. The coefficients for firm size and liquidity are -0.2271 and -0.2781, which are significant at 5%. However, the correlation coefficients for operating efficiency (-0.1724) and firm growth (-0.0536) are not statistically significant. Leverage also has a negative correlation with Tobin's Q with coefficient of -0.2310 which is strong and significant. Overall, the correlation matrix suggests that firm characteristics have inverse association with firm value as measured by Tobin's Q.

'The relationship of the independent variables among themselves indicates that firm size and liquidity, operating efficiency, firm growth & leverage are positively correlated. Liquidity and operating efficiency are positively correlated among themselves; while On the other hand, the relationship between liquidity with leverage and firm growth is a negative one. Furthermore, operating efficiency with firm growth & leverage are positively correlated. Firm growth is positively correlated with leverage'.

In view of the panel data, fixed effect and random effect regression were run and subsequently, lagrangian multipier test for random effects models was carried out. Hausman specification test was then used to decide between the two results. The result from the Hausman test revealed a Chi2 value of 9.20 with p-value of 0.1013 that is statistically insignificant. This implies that the test considered the random effect as the

most appropriate estimator and as a result of that the Lagrangian multiplier test for random effect is conducted which showed a Chi2 value of 79.06 and p-value of 0.0000 that is   for the study.

Table 3 Summary of the robust random effect results

Variable	Share Price Coef	z. value	Prob.	Coefficient	Tobin's Q T. Value	Prob.
Constant	-129.62	-3.22	0.001	1.32	4.11	0.000
FSIZ	13.85	3.39	0.001	-0.02	-0.50	0.618
LIQT	-0.51	-0.95	0.344	-0.03	-2.35	0.021
OPEFF	1.95	0.52	0.602	-0.04	-0.74	0.464
FGRT	0.34	0.39	0.698	-0.01	-0.39	0.697
LVRG	0.11	1.24	0.215	-0.002	-2.19	0.03
R- Squared		0.2610		0.1948		
Wald Chi2/ (F.)		21.92		2.97		
Prob.		0.000		0.017		

Source: STATA Output

Table 3 proves that the functional relationship between the dependent and independent variables is:

$$SP = -129.62 + 13.85FSIZE - 0.517LIQT + 1.95OPEFF + 0.34FGRT + 0.11LVRG$$
$$Tobin's\ Q = 1.32 - 0.02FSIZ - 0.03LIQT - 0.04OPEFF - 0.01FGRT - 0.002LVRG$$

The table revealed that firm size positively and significantly correlates with the firm value of listed Healthcare Enterprises in Nigeria. The beta coefficient of the variable is 13.852 and the p-value is 0.001 which is significant at 5% level of significance. When Tobin's Q is used as the dependent variable, it shows a negative insignificant effect on firm value. The result returned a coefficient of -0.02 and a t. value of -0.50, which is not significant at 10%. Overall, given that firm value as measured by stock price has a significant affect; it indicates that size plays a significant role on the firm value of firms. The implication of this finding is that the bigger the size of the firms the higher the stock prices. The result provides a basis for rejecting the first hypothesis, which states that firm size has no significant effect on stock value of listed Healthcare Enterprises in Nigeria. The finding is consistent with the findings of Muneesh and Sanjay (2014) who found a positive significant positive relationship between firm size and market share performance, but inconsistent with those of Panu, Peng and Dennis (2017) and Lan (2012), who found a significant negative relationship between firm size and market share value.

Furthermore, 'the result exhibits evidence of negative significant relationship between liquidity and firm value of listed Healthcare Enterprises in Nigeria. The result shows a beta coefficient of -0.51 with p-value of 0.34 indicating a statistically insignificant relationship at 5% significant level. This implies that liquidity as one of the proxies of firm characteristics does not significantly affect the firm value of listed Healthcare Enterprises in Nigeria. However, it has an inverse and significant effect of Tobin's Q with a coefficient of -0.03 and t. value of -2.35. Thus, because the findings on the relationship between liquidity and firm value is contingent on measure of value adopted, this study proffers that it impacts on firm value based on the Tobin's Q model. Therefore, the results serve as basis for rejecting the second hypothesis, which states that liquidity has no significant impact on the firm value of listed Healthcare Enterprises in Nigeria. This conforms to the findings of Cheung, Chung and Fung (2012) who reported negative significant association between liquidity and firms" financial performance'.

The findings on the effect of liquidity on firm value suggest that there is a tradeoff between liquidity and firm value. Firms that are highly liquid tend to have idle cash that could have been channeled to profitable investments. Also, high liquidity serves as motivation for corporate managers to pursue self-enhancing activities such as increase in perks and executive compensations which may not be commensurate with current performance of the firm. Consequently, firms that are highly liquid may signal to the market the management's inefficiency in channeling the firms" resources to value maximizing projects.

Policy Implications of the Research Findings

The findings of this study have important implications for policy in Nigeria. One major implication is that Healthcare Enterprises are the main source of medical products and facilities needed by individuals to remain healthy and fit. It is demonstrated that there are significant inefficiencies in the Healthcare Enterprises in terms of allocating financial resources across firms and in terms of valuing investment opportunities. The findings reflect the need to review liquidity and capital structure of the Healthcare Enterprises as the current position has proven to hinder their market performance. Based on the result, listed Healthcare Enterprises in Nigeria should focus more attention on liquidity management, since liquidity is having negative effect on their firm value.

CONCLUSION AND RECOMMENDATION

The study examined the 'effect of firm characteristics of firm value of listed Healthcare Enterprises in Nigeria'. Based on the study's findings, it is concluded that 'firm size has positive and significant impact on value (share prices) of listed Healthcare Enterprises in Nigeria. This implies that larger firms enjoy more investors" confidence and patronage relative to their smaller counterparts. Liquidity has negative and significant influence on

the firm value (Tobin's Q) of listed Healthcare Enterprises in Nigeria. This signifies that high liquidity is considered counterproductive by investors, which is reflected in the lower value of these firms'.

Operating efficiency has negative insignificant effect on the firm value of listed Healthcare Enterprises in Nigeria. The operating efficiency of the firms as the result showed is inadequate. This means that any further effort of the Healthcare Enterprises in the area of asset utilization will not enhance the value of the firms. Firm growth has negative but insignificant influence on the firm value of listed Healthcare Enterprises in Nigeria. This suggests that firm growth is not sufficient for market valuation of securities and does not lead to value enhancement. Leverage has negative but insignificant influences on the firm value of listed Healthcare Enterprises in Nigeria. High debt ratio does not lead to firm value as suggested by most prior studies.

In line with the findings of the study, the following recommendations are made:

i.   Healthcare enterprise management should assure enterprise's advancement in a controlled manner with the goal of obtaining an ideal size in order to benefit from economies of scale, which will lead to a greater firm value. However, if they develop above their ideal level, diseconomies of scale will emerge, resulting in a decrease in firm value.

ii.   The listed healthcare firm in Nigeria's current liquidity position is detrimental to their firm value. As a result, Healthcare Enterprises are advised to lower their current ratio and ensure that neither inadequate nor unneeded funds are invested in current assets.

iii.   The management of listed Healthcare Enterprises in Nigeria should reduce the level of leverage in their capital structure in order to improve their firm value. Their capital structure should be majorly financed by equity rather than debt. Firms should avoid situations where they are highly leveraged since this may lead to bankruptcy if they are unable to make payment on their debt.

REFERENCES

Abdullahi, M., & Ngadi, M. A. (2016). Symbiotic organism search optimization based task scheduling in cloud computing environment. *Fut Gen. Comp Syst.*, *56*, 640-650.

Baik, B., Choi, S., & Farber, D. B. (2010). Managerial ability and income smoothing. *The Acc. Rev.*, *95*(4), 1-22.

Chaopricha, P., Chan, P., & Pollard, D. (2017). "Firm characteristics and stock return". *International DSI/Asia and Pacific DSI*.

Chrysovalantis, G., Iftekhar, H. & Fotios, P. (2013). *Efficiency and stock values: Evidence from insurance industry.* Bank of Finland Research. Discussion papers 14

Davis, J. H., Schoorman, F. D., & Donaldson, L. (2015). Davis, Schoorman, and Donaldson reply: The distinctiveness of agency theory and stewardship theory. *Acad. Mgt Rev.* 22(3), 611-613

Dietrich, C. (2010). Decision making: Factors that influence decision making, heuristics used, and decision outcomes. *Inquiries Journal*, *2*(02).

Donaldson, L., & Davis, J. H. (2019). "The need for theoretical coherence and intellectual rigour in corporate governance research". *Aust. Jorn. Mgt*, *18*(2), 213-223.

El Ali, A., Yang, X., Ananthanarayan, S., Röggla, T., Jansen, J., Hartcher-O'Brien, J., ... & Cesar, P. (2013, April). ThermalWear: Exploring Wearable On-chest Thermal Displays to Augment Voice Messages with Affect. In *Proceedings of the 2020 CHI Conf on Hum. Fact. in Comp. Syst.* (pp. 1-14).

Gaganis, C., Hasan, I., & Pasiouras, F. (2013). Efficiency and stock returns: evidence from the insurance industry. *Jour. of Prod. Ana.*, *40*(3), 429-442.

Gill, A., Singh, M., Mathur, N., & Mand, H. S. (2014). The impact of operational efficiency on the future performance of Indian manufacturing firms. *Int. Jour. of Econ. & Fin.*, *6*(10), 259.

Hansen, S. & SungSuk, K. (2013). Influence of stock liquidity to firm value in Indonesian Stock Market. Int. Conf. on Bus., Econ. & Acc., 20-23 March, Thailand.

Hassan, M. I., Shajee, B., Waheed, A., Ahmad, F., & Sly, W. S. (2013). Structure, function and applications of carbonic anhydrase isozymes. *Bio. & med. Chem.*, *21*(6), 1570-1582.

Hussaini, I. U., & Majid, N. H. A. (2015). Energy development in Nigeria and the need for strategic energy efficiency practice scheme for the residential building sector. *Mgt of Env. Qua.: An Int. Jour. of Mgt*, *19*(1), 63-78.

Khalil, H. A., Firoozian, P., Bakare, I. O., Akil, H. M., & Noor, A. M. (2010). Exploring biomass based carbon black as filler in epoxy composites: Flexural and thermal properties. *Mat. & Des.*, *31*(7), 3419-3425.

Kochar, G. D., Sanjay Londhe, M. D. S., Jayan, B., Chopra, S. S., Kohli, S., Munish Verma, M. D. S., & Thapa, A. (2016). Management of Tooth Size Arch Size Discrepancy (TSASD) in Patients with Sleep Disorder Breathing. *IJO*, *27*(2).

Lane, P. J., Cannella Jr, A. A., & Lubatkin, M. H. (2018). Agency problems as antecedents to unrelated mergers and diversification: Amihud and Lev reconsidered. *Stra. Mgt Jour.*, *19*(6), 555-578

Maarof, M. G., & Mahmud, F. (2016). A review of contributing factors and challenges in implementing kaizen in small and medium enterprises. *Pro. Econ. & Fin.*, *35*, 522-531.

McWilliams, A., & Smart, D. L. (1993). Efficiency v. Structure-Conduct-Performance: Implications for Strategy Research and Practice. *Jour. of Mgt, 19(1), 63–78.* doi:10.1177/014920639301900105

Milani, G., Shehu, R., & Valente, M. (2017). Role of inclination in the seismic vulnerability of bell towers: FE models and simplified approaches. *Bull. of Ear. Eng.*, *15*(4), 1707-1737.

Mohammed, A. & Usman, S. (2016). Corporate attributes and share value of listed Pharmaceutical firms in Nigeria. *Jour. of Arts, Sci. & Com., 7,* 88-98.

Mou, Xu. & Wanrapee, B. (2015), *Factors affecting financial performance of firms listed on Shonghai stock exchange,* University of the Thai Chamber of Commerce. Discussion paper 62.

Narang, S., & Kaur, M. (2014). Impact of firm-specific attributes on shareholder value creation of Indian Healthcare Enterprises: An empirical analysis. *Glo. Bus. Rev.*, *15*(4), 847-866.

Nasrollah Zadeh, S., Ghassemi Golezani, K., & Raey, Y. (2019). Effects of shading on rate and duration of grain filling and yield of faba bean cultivars. *Jour. of Agr. Sci. & Sust. Prod.*, *21*(3), 47-57.

Onyekwelu, U. L., Nwajei, N. B., & Ugwu, K. O. (2017). Effect of firms' characteristics on financial performance of oil and gas Healthcare Enterprises in Nigeria. *Asia Pac. Jour. of Res. in Bus. Mgt*, *8*(3), 64-81.

Owolabi, S. A., & Obida, S. S. (2012). Liquidity management and corporate profitability: Case study of selected manufacturing Healthcare Enterprises listed on the Nigerian stock exchange. *Bus. Mgt Dyn.*, *2*(2), 10-25.

Patsouris, D., Qi, P., Abdullahi, A., Stanojcic, M., Chen, P., Parousis, A., ... & Jeschke, M. G. (2015). Burn induces browning of the subcutaneous white adipose tissue in mice and humans. *Cell rep.*, *13*(8), 1538-1544.

Qi, C. Z. Subramanyam, K. R. & Zhang, J. (2010). *Accounting quality, bond liquidity and the cost of debt.* Marshall School of Business, University of Southern California, USA.

Qi, C., Subramanyam, K., & Zhang, J. (201844). Accrual quality, bond liquidity, and cost of

debt. *Working paper*.

Raheman, A., & Nasr, M. (2017). Working capital management and profitability–case of Pakistani firms. *Int. rev. of bus. Res. papers*, *3*(1), 279-300.

Raja, M., & Sudhahar, J. C. (2016). An empirical test of indian stock market efficiency in respect of bonus announcement. *Asia Pac. Jour. of Fin. & Banking Res.*, *4*(4).

Reheman, A. & Nasr, M. (2007). Working capital management and profitability-case of Pakistan firms. *Int. Rev. Bus. Res. Paper,* 3, 279-300.

Russell, O. S., Akintoye, I. R., & Oseni, J. E. (2018). Determinant of Equity Prices in the Stock Markets.

Safdar, H., Hazoor, M., Toheed, A. & Ammara I. (2013). Impact of firm's characteristics on stock value: A case of Non financial listed companies in Pakistan. *Asian Econ. & Fin. Rev., 3*(1), 51-61

Saleem, Q., & Rehman, R. U. (2019). Impacts of liquidity ratios on profitability. *Interdisc. Jour. of res. in bus.*, *1*(7), 95-98.

Salehi, Bahare, Alessandro Venditti, Mehdi Sharifi-Rad, Dorota Kręgiel, Javad Sharifi-Rad, Alessandra Durazzo, Massimo Lucarini et al. "The therapeutic potential of apigenin." *Int. jour. of molecular scie.* 20(6), 1305.

Salehi, M., Khazaei, S., & Tarighi, H. (2019). Tax Avoidance and Corporate Risk: Evidence from a Market Facing Economic Sanction Country. *Jour. of Asian Fin., Econ. & Bus., 6*(4), 45-52.

Shanhua, H., LiQi, W. S., & Guochang, Z. (2017). Ultrastructural studies on menbraneous inclusions in the vacoules of Ammopitanthus mongolicus in winter. *Jour. of Chin. Elect. Micro. Soc.*, 04.

Shengquan H. & Guochang, Z. (2007). Relative Firm Profitability and Stock Price Sensitivity to Aggregate Information. *Rev. of Fin. Studies 6*, 750-799.

Siggaard-Andersen, O. (2013). The van Slyke equation. *Scandinavian journal of clinical and laboratory investigation*, *37*(sup146), 15-20.

Spence, J. T., Helmreich, R., & Stapp, J. (1973). A short version of the Attitudes toward Women Scale (AWS). *Bull. of the Psyc. Soc.*, *2*(4), 219-220.

Sunde, T., & Sanderson, A. (2009). A review of the determinants of share prices. *Jour. of Soc. Sci., 5*(3), 188-192.

Tahir, S. H., Sabir, H. M., Alam, T., & Ismail, A. (2013). impact of firm's characteristics on stock return: a case of non-financial listed Healthcare Enterprises in Pakistan. *Asian*

Econ. & Fin. Rev., *3*(1), 51.

Tan, T. C., Rahman, R., Jaber-Hijazi, F., Felix, D. A., Chen, C., Louis, E. J., & Aboobaker, A. (2012). Telomere maintenance and telomerase activity are differentially regulated in asexual and sexual worms. *Proc. of the Nat. Acad. of Sci.*, *109*(11), 4209-4214.

Troya, M., Babatunde, O. O., Polidano, K., Bartlam, B., McCloskey, E., Dikomitis, L., & Chew-Graham, C. A. (2019). Self-harm in older adults: a systematic review. *Brit. Jour. of Psych.*, *214*(4), 186-200.

Ulil, H., Bambang, S., & Djumahir, G. (2013). Firm characteristics, corporate governance and firm value. *Int. Jour. of Bus. & Beh. Sci.*, *3*(1), 8-9.

Usman, M. M., Dadrasnia, A., Lim, K. T., Mahmud, A. F., & Ismail, S. (2016). "Application of biosurfactants in environmental biotechnology; remediation of oil and heavy metal". *AIMS Bioeng.*, *3*(3), 289-304.

Uwubanmwen, A., & Eghosa, I. L. (2015). Inflation rate and stock returns: Evidence from the Nigerian stock market. *Int. Jour. of Bus. & Soc Sci*, *6*(11), 155-167.

Van-Slyke, M. (2006). "Agents or stewards: Using theory to understand the governmentnonprofit social services contracting relationship". *Jour. of Pub. Admin. Res. & Theo., 17*, 157-187.

Velnampy, T., & Niresh, J. A. (2012). "The relationship between capital structure and profitability". *Glo. Jour. of mgt & bus. Res.*, *12*(13).

Xu, M., & Wanrapee, B. (2015). "Factors affecting financial performance of firms listed on Shanghai Stock Exchange". *Unpublished MSc Project, University of Thailand*.