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ABSTRACT

The objective of this study was to establish the relationship between firm performance metrics and market value of listed firms at the Nairobi securities exchange. The specific objectives included to establish the relationship between price earnings ratio, payout ratio and the earnings per share and market value of companies listed on the Nairobi securities exchange. The research adopted a cross-sectional correlation design. The study comprised of all the firms listed at NSE as at October 31, 2017 which were sixty-five (65) firms. The study used stratified random sampling. This research used secondary data extracted from the annual published financial statements of companies, specifically the income statements and the statements of financial position. The data was collected for the period ended 2013 up to 2017. Data analysis was done using SPSS. Determination of the relationship between independent and dependent variable adopted the use of multiple linear regression model. Multiple correlation coefficient (r) was applied to determine the direction and strength independent and depend variables. To establish the explanatory power of regression model coefficient of multiple determination (r^2) was used. The significance of the model using the F-statistic was determined using Analysis of variance. The t statistic was used to find the impact of each predictor variable. The study concluded that an increase in P/E ratio and EPS significantly lead to an increase in the value of the firm while an increase payout ratio does not have a significant effect on the value of the firm. The study also concluded that there is a moderately positive correlation between P/E ratio and the value of the firm is moderate though significant and positive correlation. It also concluded that there is a positive but low correlation between payout ratio and the value of the firm. EPS and value of the firm however has a high positive and significant correlation. The regression results showed that 77.2% of variance in firm value of listed firms was explained by the variations in the firm performance matrices namely price earnings ratio, payout ratio and earnings per share (R^2 = .772; Adjusted R^2 = .758).

Key Word: *Price Earnings Ratio, Payout Ratio, Earnings Per Share, Market Value.*

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INTRODUCTION

The company market value reflects the valuation of its assets less it's liabilities. During the period of industrial revolution however, the value of a firm would be determined by tangible items including capital, labor and land (Lu, Tsai & Yen, 2010). Today, the growth of information communication technology and increased use of internet to support businesses has led to massive revolution in the use and management of these assets (Abu-Musa, 2009). This has further led to growth of knowledge regarding the changing value of these assets and subsequently the value of the company (Flensburg, 2009).

At the global level, the concern is that the development of the global financial system as a result of growth of securities market of countries significantly affects the value of companies. Countries with securities markets that have developed overtime and has adequate controls has lower cases of some market players having upper hand over trading information than others. This implies that external equity would be comparatively cheaper and therefore the best mix of the available sources of capital would have a lower cost. This trends eventually have a negative effect on the value of the firm (Aggarwal, Kyaw& Zhao, 2008). Modern day companies' management must therefore identify and implement strategies to create value for shareholders. This would help to facilitate how best to select financing and other strategies that reflect on the value of the firm (Kumar, 2015).

Anchoring on the shareholders' wealth maximization objective, investors need to develop knowledge regarding determinants of firm value as a guideline for investment decision making. Financial performance metrics such as price earnings ratio, payout ratio and earnings per share are measures that show the profitability of the organization which are necessary in making financial decision. Afza and Tahir (2012) define Price earning share as a function of the ruling price of stocks and its earnings per share (EPS). It is the relationship between stock price and Earning per Share (EPS). Price Earning (P/E) ration is the division of the price of stocks by EPS. It explains the amount of money that those willing to undertake the investment would per shilling of the company's earnings. This would show whether the investors have confidence about how the firm will perform in future and therefore influence their decision to undertake the investment or not. The dividend payout ratio is an indication of how much percent of each shilling earned is given to the equity holders in liquid cash. In other words, the pay-out ratio explains the percentage of earnings of a firm paid out as dividends against the amount retained for future investments. EPS is that part of the firms' earnings after tax and dividends for each equity share. It is considered a key driver of share prices and as a metric for measuring whether a company is profitable or not.

The market value of companies is useful in the provision knowledge regarding the performance of companies in the past as well as future prospects. It provides assessment of how investors view the company's performance and their expectation of returns in future (Gitman, 2009). It explains the price of each stock that investors are willing to pay or accept during a given period of time. The study by Jones, Danbolt and Hirst (2007) examined the reaction of stock market on the announcements of 402 Investment Company made by UK firms during 1991 to 1996. The findings of the study posit that market valuation is affected by investment opportunities and the size of the project. In Kenya, Ayako and Wamalwa (2015) conducted a study to assess the factors that determine the value of listed commercial banks at the Nairobi Securities Exchange. The outcome of the study reaffirmed that firm value is enhanced by the role of practical strategies of market capitalization, suggesting best practical strategies be employed by listed commercial bank for strengthening market capitalization. In another study, Omondi and Muturi (2013) assessed the elements that have an effect on the financial performance of listed companies at

Nairobi Securities Exchange in Kenya. The result indicates that company size, liquidity, leverage and years of operation are key in boosting how a company performs financially.

A trend witnessed at NSE indicates the value traded has increased steadily from 2011 to 2015 signifying the rapid growth of Kenyan market. The volumes traded and the related number of transactions rose through 2011-2014 but declined in 2015 due to the underlying market conditions. The total positive returns of the 2008-2015 period along with the general upward trend of most of metrics signifies that the market remains safe for investors who take a long term view with regards to their investments. For short-term oriented investors is believed that the recurring four-year pattern is an effective predictor of when to buy and when to sell. (NSE Returns-2008-2016)

Firm performance metrics are indications of how a company performs through a detailed evaluation and analysis of financial statements of a company. The analysis is then compared with the performance of those of other companies (Aliona, 2016). According to Santos and Brito (2012) most of the performance metrics identifies the key performance indicators based on how the company has grown, financial performance, satisfaction of customers, employees and corporate citizenship. Burkhardt and Wheeler (2018) further posit that firm performance metrics measures could include information related to revenues, income, expenses, assets, liabilities, or cash flow. These measures therefore show a level of financial performance and are essential in making finance-related decisions. Financial performance metrics used in the current study would include price earnings ratio, payout ratio and earnings per share. Price earnings ratio shows the correlation between Earning per Share and stock price. When making investment decisions, earnings ratio is of essence (Bhayo et al., 2011). The price earnings ratio can therefore be used to compare performance of companies. Pratt (2001) posit that the expectations of investors is the main cause of the differences when comparing companies using price earnings ratio.

The Price-Earnings Ratio (P/E Ratio) is an indication of the earning power of the company measured from the point of view of the price paid per share relative to profitability of the company. It is used to help in the determination of whether the securities are priced properly (Fischer, 1986). Payout ratio means the proportion of profits paid to shareholders as dividends (Al Najjar and Hussainey, 2009). If the amount paid as dividends to shareholders is stable, the payout ratio will fluctuate with fluctuations in earnings. A guideline on dividends is of significance to maximize shareholder value and hence the value of the firm. This makes payout ratio an appropriate control variable. Dividend policy regulates and guides a firm's management when issuing dividends to shareholders. Firms that have attained maturity and possess stability in of cash flows with few opportunities to grow have high payout ratio (Ehrdardt and Brigham, 2011). Firms that are growing fast and have opportunities to invest are likely to have a low payout ratio.

Earnings per share (EPS) is a performance metric that measures the level of profits of a company per unit of share held. This implies that it influences the prices of shares in the market. Islam, Khan, Choudhury and Adnan (2014) defines EPS as the proportion of a company's profit after tax and dividends shared among the shareholders. A profit in this case is computed through division of reported profits for a given period by the total number of outstanding shares. Balaputhiran (2014) posit that the return of shareholders comprises of profits shared in form of dividends and the capital gain. Capital gain is the difference between the buying price and the selling price of the shares. Dividends on the other hand is a decision by the Board that is ratified during the annual general meeting especially for publicly listed companies. The benefits arising from capital gain therefore exists when there is a significant growth in the market value of company's shares overtime. This

would further improve the company's position in terms of the price per share and subsequently earnings per share.

The concept of market value of firms plays a critical role in an investment criterion because companies exist in the market to make worth for their stockholders. The value of firm is said to have improved if the money value of stockholders improves as a function of the proportion of market valuation of stocks to the value as reported in the historical financial statements (Oladele, 2013). Company's market value is determined by a number of factors with different significance levels. The determinants of market value can be either internal or external aligned with practical strategic plan of the firm. Huselid et al. (2013) cited the key determinates of firm value are cash flow, effectiveness, market value and productivity. According to Hui-Ju & Shin-Ping (2011) firm value key determinates are dividend payout ratio, shareholder's wealth, company growth and leverage. Renee and Mehran (2005) on the other hand posit that determinants of firm value include capital structure, dividend ratio and market price. The current study takes an analysis of the relationship between firm performance metrics and firm value of companies listed at the Nairobi securities exchange. The financial firm performance metrics considered include price earnings ratio, payout ratio and earnings per share.

Statement of the Problem

The relationship between firm performance metrics and market value has been a puzzle for both company's management and investors. Although firm performance metrics has consistently exhibited direct and significant effects on firm value, identification and the establishment of the relationship between specific performance metric and the value of firms is challenging in today's organizations. The concern is that there is fluctuating and volatile changes in the value of listed firms which is a cause of worry to investors. The fact is that the greater the firm value, the better the financial position of the company which implies shareholder wealth maximization.

Specific studies have been conducted in the area of firm performance metrics in relation to the value of listed companies. Kumar (2015) established that increasing use of borrowed money to finance a company leads to high possible deviations in returns to shareholders and this has implication on the value of the firm. The study is however limited in scope because of its focus on the UAE market. The study by Mahmood and Waheed (2014) established that price earnings ratio significantly affect the price of equity based securities. This implies investment decision making would take into consideration changing trends of price earnings ratio because it has a significant positive relation with stock prices. This study focused on the emerging markets of Pakistan. The Pakistan market is contextually different from the Kenyan market. Lu, Tsai and Yen (2010) in their study found out that the level of profits that a company generates and dividends paid significantly influence firm valuation among the emerging market of Taiwan.

In Kenya the stockholders have observed numerous quoted companies' earnings fluctuate significantly to the extent of some companies' share prices experiencing a downward trend. Some of those firms have faced financial problems forcing them to be suspended from transaction in the security market. The question of whether investors should rely on dividend payments or the market valuation of a firm based on the market pricing upon shares as a business's viability analysis remains a worry of decision makers (Morara, 2015). The assessment of determinants of value of firms is therefore a critical component of every organization more so the firms listed at the NSE market. This is due to the fact that there is more scrutiny of the financial statements of the listed firms.

Study undertaken by Kamunde (2011) determining the firm values of listed telecommunication companies in Kenya. This study focused on the analysis of the relationship between capital earnings-related expenses, operation cost, dividend

payout as well as gearing ratio on the value of firm. The findings indicated that dividend payment and gearing ratio have an indirect relationship with value of the firm. Ayako and Wamalwa (2015) ascertained that determination of market value of firms include resources owned by the company, the funding makeup, expected cash movements, distribution of profits to shareholders, existence of non-physical assets and the market value of the securities. Studies by Samuel, Mokaya, Nyang'ara & Lillian (2013) established a strong and positive relationship amid the rate at which dividends grow and capitalization hence establishing a significant relationship between variables.

The aforementioned studies create a need to establish the relationship of price earnings ratio, payout ratio and earnings per share of firm performance metrics and market value of companies listed firms in Kenya since they are insufficient in the determinates and coverage of the industries. The market situation in Kenya is significantly different arising from differences in economic growth, investment culture and the level of growth of the Nairobi Securities exchange market as well as other factors affecting the value of firms. The current study was therefore meant to close this study gap by analyzing the relationship of firm performance metrics on market value (MV) of companies on the NSE.

Research Objectives

The general objective of this study was to determine the relationship between firm performance metrics on the market value of companies listed on the Nairobi securities exchange. The specific objectives were:-

- To establish the relationship between price earnings ratio and the market value of companies listed on the Nairobi securities exchange.
- To determine relationship between payout ratios on market value of firms listed and the Nairobi securities exchange.
- To establish the relationship between Earnings per share and market value of firms listed on the Nairobi securities exchange.

LITERATURE REVIEW

Efficient Market Hypothesis

This theory was put forth by Fama (1970). The theory states that the market price of traded securities is a reflection of the current market status based on the available information in the market. An investor therefore cannot earn arbitrage profits by using this information. The tenet of the theory is based on why prices change in the market and how the change takes place. According to Fama (1970) any new information that arrives in the market reflects instantly in securities prices. Generally, the traits of perfect markets are reflected in markets that tend to allocate resources efficiently (Samuelson, 1965).

Fama (1970) noted that the EMH falls into three sub hypotheses namely weak form, semi strong form and strong form which is based on information available in the market. The weak form EMH means that the prevailing prices of securities in the market have taken into consideration existing information as well as historical data on rates of return. This form indicates that no relationship between the stock exchange data and expected rate of return. Semi strong form EMH arises in situations where publicly available corporate information and those involving the external environment with possible influence on the securities pprices have been fully reflected in the market price of securities. Investor using this news which is not public cannot benefit by making better investment decision. The strong form EMH on the other hand arises when the prices of securities have incorporated publicly and privately available information. The implication is that, even the insider trading is not possible for this form. Fundamental analysis is the procedure where every individual stocks, sector and entire stocks market have its respective intrinsic value reflecting the current corresponding economic factors. While determining the intrinsic value of certain stock, a

fundamental analyst evaluate and analyze the relevant variables like political risk, current market interest rates and the investment's future earnings capability (Balvers, Cosamino, & MacDonald, 1990).

Signaling Theory

The theory was developed by Ross (1977). It states that there exists information asymmetry with respect to what managers know and information available to investors. The argument is that top management have insider information not available publicly. They however intend to share the information externally to have an influence on the price of securities. The fear of the top management is the possible suspicion with which the public would receive the information. According to the theory, companies that have high corporate performance especially profitability would use the financial-based results as information. This would signal the market (Rouf, 2015). The essence of the theory of signaling is that strong efficiency forms of efficient market hypothesis do not apply and the senior officers in firm have information that will help the outsider investors. The information is assumed not to be accessible to everybody similarly leading to the imbalance in information about the market.

The signaling model by Lintner (1956) pointed that dividend disbursement depend generally on steady and sustainable earnings, firms would adjust their dividend policy in response to changes in the predictability of future earnings. The certainty of future earnings relies on not only the volume of expected futures earnings but also the volatility of the earnings. Bhattacharya (1979) also suggested that dividend adjustments are a function of expected future cash flows along with expected cash flow volatility. The argument is that current dividends changes are not only associated with expected future earnings, but also with earning fluctuations. The theory therefore proposes that income smoothing can be used to inform the public regarding the forecasted or expected corporate earnings. Firm performance metrics therefore contains incremental information that improves the prediction of future firm performance (Hamzavi and Aflatooni, 2011).

Investors view dividend announcement as a way of the management communicating about the firm performance. An increase in earnings per share (EPS) is a strong message of the management confidence in the future ability of the firm to make good earnings. A reduction in earnings per share can be regarded by some investors as a sign of financial weakness the firm could be going through. (Grinblatt and Titman, 1996). This hypothesis is relevant to the study because Investors view dividend announcement as a way of the management communicating about the firm performance (Author, 2014). When there is improved metrics such as earnings per share, price earnings ratio and payout ratio, it sends positive signals to investors that the value of the firm is likely to be maximized over time.

Random Walk Theory

The theory was developed by Bachelier (1900). The theory states that there is independence of prices between periods with a mean of zero with the difference between periods affecting the variance. Fama (1970) conducted tests on high end securities markets regarding the weak form efficiency and the tests confirm existence of such market traits. The study by Lo and McKinney (1999) however opined that random walk traits is non-existent. The findings by Fama and French (1988) on the other hand found out that prices of securities are stochastic as those prescribed by efficient markets. The widely accepted belief of fundamental analysts is contradicted by the random walk theory.

According to fundamental analysists, changing corporate information as well as key corporate announcements affects the prices and value of securities. The changes of these variables affect the share values. This is an outcome of random walk behavior. However, Cootner (1964) and Malkiel (1973) acknowledged some statistical anomalies pointing to some exceptions to the random walk theory. This is the case of illiquid securities of small

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firms that are opaque to changing market information. There are also cases of seasonality in the securities market and securities that pay higher dividends even during low market performance that creates anomalies. Molodovsky (1953) found that stocks had mispricing which was noted as having "over reaction" before the information was released but the shares prices adjusted and corrected themselves after the news but noted as having "under reaction". The high price earnings ratio stocks underperform in the market, while their low P/E ratio in similar market environment outperforms the market which Molodovsky (1953) had described as mean reverting process where he observed that while stocks fluctuate, they will do so approximately a computable value which Weigard & Iron (2004) called comparable firm average.

Empirical Literature Review

A number of empirical studies reviewed have conceptualized the firm performance metrics as independent variables and the value of the firm being the dependent variable. Afza and Tahir (2012) defines P/E ratio as the current market price of a stock divided by its earnings per share (EPS). It is the relationship between stock price and Earning per Share (EPS). P/E ratio, measured as dividing stock price by earnings per share indicates how much investors are willing to pay for each shilling of firm's earnings. A study by Estrada (2003) indicated that when a company has a high price earnings ratio, the securities will be attractive as investors would want to share part of the earnings increment. Industries with companies enjoying high price earnings ratio are popular due to expected growth prospect. When the price earnings ratio is low, the securities of such companies do not become popular and investors' confidence regarding possible growth in the company's earnings would be low. This further impact on the value of the company.

Githinji (2011) found out that stock performance does not have any significant relationship with P/E ratio and PEG ratios for NSE listed firms and recommended investors should use a combination of methods instead of relying only with P/E and P/B a ratio while making investment decisions. Study undertaken by Kihara (2009) on the other hand concluded that earnings changes can be predicted by E/P ratios and can identify firms with potential to grow.

Study undertaken by Osano (2010) on evaluation of price and the asset values in relation to price being predictive of returns of listed companies. The study used the P/E and PIB ratios as forecasting variable was examined using NSE data from 1998 to 2002 the return for subsequent five years 2003 to 2007 were used to evaluate the predictive power of the two valuation multiple. A quantitative analysis was conducted to confirm any existing major cases of difference between the average returns for the two types of portfolios, concluded that P/E ratio have predictive capability of expected future stock returns of companies listed at the NSE and also found that portfolio with high P/B and P/E ratios performed worse as compared to portfolio with low P/E and P/B ratios.

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Anil et al (2008) has argued that profitability has always been considered as a primary indicator of a firm's dividend payout ratio. Munene (2012) conducted a study on the relationship between dividend pay-out ratio and value of shares of firms listed at the Nairobi securities exchange. The findings of the study showed that dividend pay-out ratios affect the value of shares of a firm and that this relationship is significant and positive. Results also revealed that the lag of dividend payout has a significant relationship with the share value.

Conceptual Framework

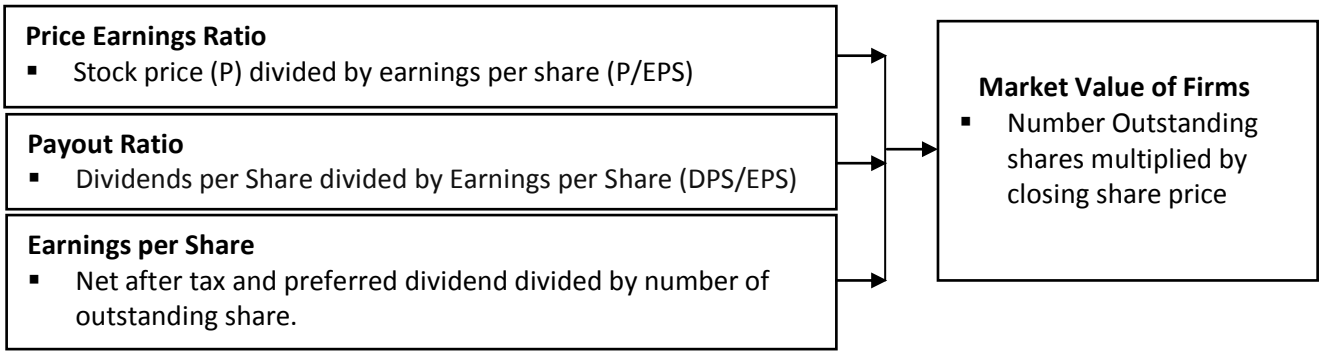

Figure 1: Conceptual Framework

Source: Author (2019)

METHODOLOGY

This research adopted cross-sectional correlation design. Correlation study involves collection and analyses of data to determine whether there a relationship and strength between quantifiable variables. The target population of the study consisted of all companies listed at the Nairobi Securities Exchange as at October 31, 2018 which stood at 65. The study used stratified random sampling. The sectors were divided into thirteen (13) and under each sector, a sample of firms were selected randomly for study.

This research used secondary data that was collected on the number of shares outstanding and closing share price per month for five years to compute the market value of the companies. The monthly average of the share prices was used to compute annual figures. These figures were obtained from the published financial statements of companies, specifically the income statements and the statements of financial position as well as the NSE data. The data collection was done through extraction from the NSE reports and financial statements of the various companies. To determine the relationship of price earnings ratio, payout ratio and earnings per share on market value of quoted companies at the NSE market a multiple linear regression model was used. The regression model was of the form:

$$Y_{it} = \alpha + \beta_1 X_{1it} + \beta_2 X_{2it} + \beta_3 X_{3it} + \varepsilon$$

Where:

Y = Market Value (Dependent variable).

α = Constant

β_1, β_2 and β_3 = Coefficient of Independent variables

X_1= Price Earnings Ratio

X_2= Payout ratio.

X_3 =Earnings per Share

ε = Error term

t = Time period

i= Specific firm

FINDINGS

The analysis was based on the variables under study. Regarding the independent variables, the findings indicated that payout ratio had the highest mean of 22.1962 (SD = 24.75580) and then earnings per share had a mean of 8.3467 (SD = 14.17408) while P/E ratio had the lowest mean of 6.9161 (SD = 9.36101). The low mean for P/E ratio means that the figures were low for the years under analysis. The dependent variable, the value of the firm however had a high mean of 19.4760 (SD = 26.91972). The standard deviations indicated the variations between the data values. The results also showed that the data was normally distributed as can be established through the skewness and kurtosis values that fell between -1 and +1 (Burns & Burns, 2008). The analysis is given in the Table 1 below:

Table 1: Descriptive Statistics

	N	Mean		Std. Deviation	Skewness		Kurtosis	
	Statistic	Statistic	Std. Error	Statistic	Statistic	Std. Error	Statistic	Std. Error
P/E Ratio	55	6.9162	1.26224	9.36105	3.277	.322	13.229	.634
Payout ratio	55	22.1967	3.33806	24.75569	1.554	.322	2.082	.634
EPS	55	8.3465	1.91122	14.17400	2.280	.322	5.905	.634
Firm Value	55	19.4760	3.62985	26.91972	2.369	.322	5.402	.634
Valid N	55							

Grand Mean = 14.2338, SD = 18.8027

Source: Research Data (2018)

Test of Normality

Kolmogorov-Smirnov and Shapiro-Wilk Tests

These tests were conducted to check on the normality of the data. In this test, all distribution scores were entered in the SPSS package and results were examined. As suggested by Tabachnick and Fidell (2001) a Shapiro-wilk statistics of below 0.05 mean that the data was not normally distributed. Based on the observation made from the result presented in Table 2, the data was normally distributed with all the variables attaining a Shapiro Wilk value greater than 0.05. Shapiro Wilk values were used to assess normality because the test has a better statistical power compared to Kolmogrov-Smirnov test.

Table 2: Test of Normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
P/E Ratio	.504	55	.041	.641	55	.065
Payout Ratio	.300	55	.032	.819	55	.078
EPS	.648	55	.041	.737	55	.067
Firm Value	.275	55	.023	.672	55	.054

Multicollinearity Test

Multicollinearity is a situation where the independent variables are highly correlated (Ombaka, 2014). Multicollinearity increases the standard errors of the coefficients and thus making some variables statistically not significant instead of being significant. In this study multicollinearity was evaluated using VIF and tolerance values. Hair et al. (2006) posit that in evaluating Multicollinearity, VIF value should not be greater than 10 and less than 1, whereas tolerance value of less than 0.20 depicts a serious collinearity problem (O'Brien, 2007). The results indicated that all the VIF values were greater than 1 and less than 10 while the tolerance values were above 0.2. This was a sign of lack of multicollinearity among the variables under study. Results of the tests of multicollinearity were presented in Table 3.

Table 3: Multicollinearity Test

Model	Variables	Collinearity Test	
		Tolerance	VIF
P/E Ratio, Earnings Per Share, Payout Ratio and Market Value	P/E, EPS, POR	1.000	1.000
	P/E, EPS, MV	0.465	2.152
	EPS, POR, MV	0.465	2.152

Heteroscedasticity Test

Heteroscedasticity is a situation where the variance of independent variable (IV) is different across the data unlike the case of Homoscedasticity that expresses a situation whereby the dependent variable portrays similar variance that cuts across the values for the IV (Ghasemi & Zahediasl, 2012). Heteroscedasticity was evaluated using Koenker test. In this test, a p-Value > 0.05 indicated that the data meets the requirement of homoscedasticity. All the p values were above 0.05 thus the data was not heteroscedastic. The result of this test was presented on table 4.

Table 4: Heteroscedasticity Test

Model	Variables	Koenker Test	
		LM	Sig.
P/E Ratio, Earnings Per Share, Payout Ratio and Market Value	P/E, EPS, POR	1.580	0.209
	P/E, EPS, MV	3.691	0.055
	EPS, POR, MV	0.697	.0404

Correlation Analysis

To establish the relationship between the independent variables and the dependent variable the study conducted correlation analysis which comprised of coefficient of correlation and coefficient of determination.

Pearson Bivariate correlation coefficient was used to compute the correlation between the dependent variable (Market Value) and the independent variables (Price Earnings Ratio, Payout Ratio and Earnings per Share). The relationship was assumed to be linear and the correlation coefficient ranges from -1.0 (perfect negative correlation) to +1.0 (perfect positive correlation) (Sekaran, 2015). According to Kothari and Gang (2014) the correlation coefficient is calculated to determine the strength of the relationship between dependent and independent variables. The result of the Pearson correlation was as given in the Table 5. It showed the relationship between the dependent and independent variables. The study used the Karl Pearson's coefficient of correlation (r). According to the findings, there was a positive correlation between the independent variables; price earnings ratio, payout ratio and earnings per share and the dependent variable; market value. The analysis indicated the coefficient of correlation between price earnings ratio and firm value is positive and significant ($r = .546$; $p < .005$). This implied that an increase in earnings per share led to increased value of the firm. The coefficient of correlation between payout ratio and firm value is also positive though not significant ($r = .228$; $p > .005$). This meant that increased payout ratio led to improved value of the firm though the effect is not significant. Finally, the findings indicated that Earnings per Share and firm value are positively correlated. The correlation was significant meaning that improved earnings per share led to improved firm value. ($r = .823$; $p < .005$)

Table 5: Pearson Correlation

		P/E Ratio	Payout Ratio	EPS	Firm Value
P/E Ratio	Pearson Correlation	1			
	Sig. (2-tailed)				
	N	55			
Payout Ratio	Pearson Correlation	.151	1		
	Sig. (2-tailed)	.271			
	N	55	55		
EPS	Pearson Correlation	.319*	.346**	1	
	Sig. (2-tailed)	.017	.010		

	N	55	55	55	
Firm Value	Pearson Correlation	.546**	.228	.823**	1
	Sig. (2-tailed)	.000	.094	.000	
	N	55	55	55	55

*. Correlation is significant at the 0.05 level (2-tailed).

**. Correlation is significant at the 0.01 level (2-tailed).

Coefficient of Determination (R^2)

To assess the research model, a confirmatory factors analysis was conducted. The four factors were then subjected to linear regression analysis in order to measure the success of the model and predict causal relationship between independent variables and the dependent variable. The analysis was given in the Table 6. It showed that 77.2% of variance in firm value of listed firms was explained by the variations in the firm performance matrices namely price earnings ratio, payout ratio and earnings per share (R^2 = .772; Adjusted R^2 = .758). The implication was that only 22.8% of the variations in the value of listed firms was explained by variations in other factors not discussed in the current study. The R also revealed a positive association between the firm performance metrics and the value of the firm (R = .879). The standard error of the estimate given at 13.23037 finally showed that the average distance of the data points from the fitted line was about 13.23%.

Table 6: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.879[a]	.772	.758	13.23037

a. Predictors: (Constant), EPS, P/ERATIO, PAYOUT RATIO

Regression Analysis

To determine the relationship of price earnings ratio, payout ratio and earnings per share on market value of quoted companies at the NSE market a multiple linear regression model was used. In the analysis of variance, the F ratio indicated that the model was significant ($p<0.05$). This meant that price earnings ratio, payout ratio and earnings per share reliably predicted the value of listed firms at the NSE. The implication was that variations in earnings per share, price earnings ratio and payout ratio led to variations in the value of the firms listed at the NSE. Table 7 further showed that the total variance has N-1 degrees of freedom given by N-1 (55 – 1). The Residual degrees of freedom on the other hand was 51. Finally, it also showed the mean squares and the sum of squares. The analysis of variance was as given in the Table 7:

Table 7: Analysis of Variance

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	30205.071	3	10068.357	57.519	.000[b]
	Residual	8927.178	51	175.043		
	Total	39132.248	54			

a. Dependent Variable: FIRM VALUE

b. Predictors: (Constant), EPS, P/E RATIO, PAYOUT RATIO

Beta Coefficients

Table 8 showed beta coefficients of the independent variables. It showed that the beta coefficient of P/E ratio (β= 0.319, t=4.522, $p<0.05$) was statistically significant. It also indicated that a unit change in P/E ratio is associated with .919 increase in the value of the firm. The Payout ratio is also statistically insignificant (β= -.079, t=-1.101,

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p>0.05) and a unit change in pay-out ratio is associated with a -.085 variation in the value of the firm. Finally, it showed that EPS is statistically significant (β= .748, t=10.048, p<0.05). Equally, a unit change in EPS leads to 1.420 increase in the value of the firm. These results indicated that increase in P/E ratio and EPS significantly lead to an increase in the value of the firm. Based on the findings, the regression model can therefore be stated as follows:

$Y = 3.163 + .919X_1 - .085X_2 + 1.420X_3$

Table 8: Beta Co-efficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	3.163	2.655		1.192	.239
	P/E Ratio	.919	.203	.319	4.522	.000
	Payout Ratio	-.085	.078	-.079	-1.101	.276
	EPS	1.420	.141	.748	10.048	.000

a. Dependent Variable: Firm Value

Source: Research Data (2018)

Hypothesis Testing

The section presents the results of the tests of hypotheses as guided by the three objectives of the study using value of the firm as the dependent variable.

Hypothesis 1

H_{o1}: Price earnings ratio does not affect market value of firms listed at the Nairobi Securities exchange.

From the findings, price earnings ratio has a significant influence on the value of firms listed at the NSE. This is consistent with the findings by the regression analysis where t-value is 4.522 which is greater than the critical value 2.0 and a p-value of 0.00 at 95% level of significance which is less than 0.05. The study therefore rejected the null hypothesis that price earnings ratio does not affect market value of firms listed at the Nairobi Securities exchange.

Hypothesis 2

H_{o2}: Payout ratio does not affect the market value of firms listed at the Nairobi securities Exchange.

From the findings, payout ratio does not have a significant influence on the value of firms listed at the NSE. The regression analysis also indicated that t-value was -1.101 which was lower than the critical value 2.0. The p-value (p = .276) was greater than 0.05 hence the relationship was not significant. The study therefore accepted the null hypothesis that payout ratio does not affect the value of firms listed at the NSE.

Hypothesis 3

H_{o3}: Earnings per share do not affect the market value of companies listed at the Nairobi Securities exchange.

From the findings, earnings per share have a significant influence on the value of the firms listed at the NSE. This finding is consistent with the outcome of the regression analysis where p-value which is less than 0.05 (p = .000). The study therefore rejected the null hypothesis that earnings per share does not affect the value of listed firms at the NSE.

Interpretation and Discussion of Findings

The findings were based on the objectives. Specifically, the study was meant to establish the relationship between price earnings ratio and the market value of firms; to determine relationship between payout ratios on market value of firms and to establish the relationship between Earnings per share and market value of firms listed on the Nairobi securities exchange.

Regarding the descriptive statistics, the study found out that the companies had high figures for payout

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ratio followed by earnings per share and then price earning ration based on their means. The implication is that the average figures under analysis were high payout ratio compared to the values of the other variables under study. The dividend pay-out ratio indicates the percentage of each shilling earned that is distributed to the owners in form of cash. The findings also indicate that the companies had consistently high payout rations throughout the study period. The standard deviation shows the variations in the performance metrics during the different periods under study.

The correlation coefficient showed a positive correlation between price earnings ratio and the value of the firm. This implied that an increase in price earnings ratio leads to increased value of the firm. The findings of the study were consistent with the research by Mahmood and Waheed (2014) which stated that price earnings ratio and size of firm has significant positive impact on stock price. This means that investors can apply investment criteria that utilize price earnings ratio anomalies to earn abnormal returns, because both have significantly positive relation with stock prices and subsequently the value of the firm.

The findings also indicated that the correlation between payout ratio and value of the firm is positive though not significant. The implication was that increased payout ratio leads to improved value of the firm though the effect is not significant. The findings were consistent with the study by Islam, Khan, Choudhury and Adnan (2014) which indicated that the portion of a company's profit allocated to each share of common equity is significant in determining the value of the firm.

Regarding the correlation between earnings per share and the value of the firm, the findings indicated that earnings per share and firm value are positively correlated. The correlation is also significant. This means that improved earnings per share leads to improved value of listed firms at the NSE. The study by Balaputhiran (2014) found that there is no significant association between firms' performance and EPS. The study by Islam, Khan, Chaudhury and Adnan (2014) however found out that in countries like USA and some other developed countries, there is positive movement of the EPS and share price like increasing at the increasing rate as well as decreasing the decreasing rate. The prices are automatically adjusted on behalf of very short of time. But the problem is with some developing countries capital market. The findings however indicated that it takes time to adjust the price on behalf of the EPS.

A regression model was used to determine the relationship of price earnings ratio, payout ratio and earnings per share on market value of quoted companies at the NSE. The analysis of variance indicates that the model was significant. This means that price earnings ratio, payout ratio and earnings per share reliably predict the value of listed firms at the NSE. The implication is that variations in earnings per share, price earnings ratio and payout ratio jointly lead to variations in the value of the firms listed at the NSE. Regarding the beta coefficients, the study further found out increase in P/E ratio and EPS significantly lead to an increase in the value of the firm.

Finally, hypothesis testing was carried out based on the specific objectives. On hypothesis one, the study found out that price earnings ratio has a significant influence on the value of firms listed at the NSE. The study therefore rejected the null hypothesis that price earnings ratio does not affect market value of firms listed at the Nairobi Securities exchange. This confirmed the implication that variations in price earnings ratio significantly affect variations in the value of listed firms at the NSE. On hypothesis two, the study found out that payout ratio does not have a significant influence on the value of firms listed at the NSE. The study therefore accepted the null hypothesis that payout ratio does not affect the value of firms listed at the NSE. The findings were however consistent with the study by Arnott and Asness (2012) who indicated that there is direct relationship between dividends paid out to shareholders relative to the company's net income and expected growth in profits. Finally, the result of

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testing hypothesis three found out that earnings per share have a significant influence on the value of the firms listed at the NSE. The study therefore rejected the null hypothesis that earnings per share does not affect the value of listed firms at the NSE.

SUMMARY AND CONCLUSION

The study found out that the values for price earnings ratio were moderately high given by the mean and were evenly spread as shown by the standard deviation. The study also found a positive correlation between price earnings ratio and the value of the firm. The correlation was found to be moderately high. The implication is that improved values of prices earnings ratio leads to improved values of listed firms at the NSE. The findings complement the work of Estrada (2003) who found out that when a company has a high price earnings ratio, the securities will be attractive as investors would want to share part of the earnings increment.

The study found out that the companies had high figures for payout ratio meaning that average figures under analysis of payout ratio were high compared to the values of the other variables under study. The dividend pay-out ratio indicates the percentage of each shilling earned that is distributed to the owners in form of cash. The study also found out that payout ratio does not have a significant influence on the value of firms listed at the NSE. The study therefore accepted the null hypothesis that payout ratio does not affect the value of firms listed at the NSE. The study by Munene (2012) however stated that dividend pay-out ratios affect the value of shares of a firm and that this relationship is significant and positive.

The study concluded that earnings per share have a significant influence on the value of the firms listed at the NSE. The correlation between EPS and firm value was found to highly positive and significant. The study therefore rejected the null hypothesis that earnings per share does not affect the value of listed firms at the NSE. The implication is that an increase in EPS significantly lead to an increase in the value of firms listed at the NSE. The findings were consistent with the study by Islam, Khan, Choudhury and Adnan (2014) who found out that the portion of a company's profit allocated to each share of common equity is significant in determining the value of the firm.

RECOMMENDATIONS

The study recommendations were based on the findings. The fact that P/E ratio significantly affect the value of the firm implied that investors can apply investment criteria that utilize price earnings ratio. Firms should also consider the effect while devising their policies in order to create value for the shareholders because relationship in price earning has significant impact on the market value which increases wealth for the shareholders. Companies should focus on factors explaining variation in P/E ratios which would also help in making investment decisions for building their portfolios. Corporations therefore, should for example pay high dividends to their shareholders in order to increase investor's confidence.

The study is also of the view that dividend policy has proven to be of paramount importance with regards to the market share value and thus listed company's management should avail the policy to its shareholders. This grants them an opportunity to contribute to the improvement of the policy. The companies must therefore adjust their dividend policy to improve the market value of its shares. For an optimal dividend policy to be achieved and maintained, the company's management should maintain regular dividend payment and any changes in policy should be shared with the shareholders. Finally, the study recommended the need for the listed companies to inculcate high but sustainable performance culture to ensure improved levels of payout as well as EPS.

Areas of Further Research

The study was only limited to three performance metrics that affect the value of listed companies at the NSE. Thus, more research should be carried out to determine other possible metrics. Other studies

should also consider the moderating effects of firm size, managerial competency and leverage levels. Another research area that could be done is to find out the factors that affect the value of non-listed firms, specifically family owned enterprises where the incidence of business failure is greater than larger corporations. It would also be of interest if future research can investigate how the value of the firm would be affected by the moderating variables such as changes in tax policy, pattern of past dividends, legal rules, financial leverage, opportunities, growth stage and capital structure. Other factors such as ownership structure, shareholder's expectations, tax position of shareholders, industry practice and growth stage can also be considered in future studies independently or as moderating variables in the assessment of the value of the firm.

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