Firm Characteristics and Financial Performance of Non-Financial Firms Listed at Nairobi Securities Exchange, Kenya

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Abstract
Background: This study investigated the effect of firm characteristics on financial performance of non-financial firms listed at the Nairobi Securities Exchange for the period from 2009 to 2018. The firm characteristics examined included: Asset tangibility, Firm growth and Firm age. **Materials and Methods:** This study used both cross sectional and longitudinal research designs, organized as panel data. The sample population of the study consisted of thirty-three (33) non-financial listed firms. The study employed purposive sampling procedure in the determination of the sample size and secondary data from annual financial reports of the firms, African Listed Companies, Nairobi Securities Exchange publications and Capital market Authority handbooks. The data collected was analysed using STATA which was basically descriptive, correlation and regression analysis. **Results:** The findings of the study showed a significant negative effect of asset tangibility on financial performance as measured by return on assets (ROA). The findings also revealed a significant positive effect of firm growth on ROA. On firm age, the findings indicated a significant negative effect on ROA.
Conclusions: This study concluded that asset tangibility and firm growth have significant effects on financial performance of non-financial firms. The study also concluded that the age of the firm is critical and significant when determining the effect on financial performance of non-financial firms. The study recommended that, listed non-financial firms should maintain a considerable degree of fixed assets and increase other assets to minimize heavy maintenance costs which decrease financial performance of the firms.
Keywords: Firm Characteristics, Financial Performance, Nairobi Securities Exchange.

Introduction

Zou and Stan (1998) underscored the importance and the role of firm characteristics in a business environment. They defined firm characteristics as a demographic and managerial variable which in turn comprises of the firm's internal environment. Essentially, firm characteristics are firm attributes or specific features that distinguish one firm from the other. Firm attributes are numerous; it includes firm size, leverage, liquidity, sales growth, asset growth, turnover, profitability, industry type, firm age, geographical location, asset tangibility, nature of business and any other feature that distinguishes one firm from the other (Subrahmanyam & Titman, 2001). Others include ownership structure, board characteristics, age of the firm, firm size, dividend pay-out, access to capital markets and growth opportunities. Titman and Wessels (1998) used asset tangibility (measured by fixed assets) as a proxy for firm characteristics. According to the study, larger firms and firms with higher level of fixed assets in their statement of financial position, tend to have higher leverage ratios. The argument therefore could be because these firms have more collateral, which facilitates the credit provided by the financial institutions or fund providers. Campello (2007) also used asset tangibility as a proxy for firm characteristics. The study concluded that firms with more tangible assets have a larger ability to issue secured debt. Ochingo and Muturi (2018) analyzed firm characteristics of savings and credit cooperatives society in Kenya. Specifically, the study used capital adequacy, asset quality, operational efficiency and liquidity as proxies for firm characteristics.

Review of Literature

Kogan and Tian (2012) categorized firm characteristics into three main groups which include: Structure related variables, Market related variables and Capital related variables. Foremost, Structure related variables include Firm age, ownership and firm size. Secondly, Market related characteristics include Industry type, environmental uncertainty and market environment. Lastly, capital related variables include capital adequacy, asset growth, operational efficiency, asset quality, asset tangibility and liquidity. The results of the study revealed that market related firm characteristics, structured related firm characteristics and capital related characteristics had positive effect on performance of micro finance organizations. In addition, the relationship between the age and size of microfinance was positive. Firm size, firm age, leverage and liquidity had significant positive relationship with financial performance.

Penrose (1995) defined firm growth in two diverse ways. First, the study defined firm growth as an increase in specific amount, growth of certain parameters such as sales, production, or exports. Secondly, firm growth was defined as a specific development process, similar to biological processes, resulting in an increase of size or improvements in quality in the firm. Although there are no hard-and-fast rules of defining growth, these firms generally have increased annual revenues or assets growth by more than industry average period over a sustained period of time. Growth provides additional capabilities, opportunities, revenue and profit. Growth can be organic or from amalgamations, mergers and acquisitions (Maggina & Tsaklanganos, 2012). Fama and French (2005) argued that firm age can be measured in two different perspectives. First, firm age can be measured as the number of years elapsed since the firm was first listed, plus one to avoid zero ages. This measure, which is called listing age has been widely used by many studies as a proxy for firm characteristic in previous literature (Chun et al., 2008; Mwebia, 2017). Moreover, listing age is more critical since it's a defining

moment in the firm's life (Shumway, 2001). The second measure of firm age is incorporation age which is measured by the number of years elapsed since the firm was first incorporated. Adelegan (2009) on the other hand noted that the effect of size is neutral and that older firms tend to rely more on internal funds to finance their corporate investments than the small and medium firms. Firms that are new require time to adapt to the environment. A new firm needs to catch up with an older firm when the new firm's performance is lower than that of the older (existing) firm so as to be competitive in the market. Therefore, it is expected that firms that are new will show higher growth rates in productivity than the older firms as a result of high free cash flow. Hence, age of the firm is negatively correlated with productivity growth rate because older firms have lower free cash flow. Therefore, from the above arguments and discussions, this study borrowed from the studies by Loderer and Waelchli (2010); Maina et al (2017); Mutende *et al* (2017); Mulwa (2016) and thus adopted assets tangibility (TAN), firm growth (GROW) and listing age (AGElist) as components of firm characteristics. These proxies were selected since their results from previous studies revealed significant relationships with financial performance. Hence, this study sought to fill the gap in the literature by investigating the effect of firm characteristics on financial performance of non-financial firms listed at Nairobi securities exchange in Kenya for a period of 10 years (2009 to 2018).

Financial Performance
The financial performance of the firm is measured by how better off the shareholder is at the end of a period, than at the beginning. This can be established using accounting-based ratios derived from financial statements, mainly the balance sheets and income statements, or using data on security market prices (Berger & Dipatti, 2002). The study further defined firm performance as the ability to achieve its objectives by using resources in an efficient and effective manner to achieve its planned financial results as measured against its intended outputs.

According to Short *et al* (2007); Ameen and Kiran (2017); Martis and Bremen (2013); Abor (2007); Akeem et al (2014), financial performance was measured using several parameters which included; ROA, ROE and Tobin's Q often used as the firm's performance measurement indicators. These ratios give an indication of whether the firm is achieving the owners' objectives of making them wealthier, and can be used to compare the firm's ratios with other firms or to find trends of performance over time. Charreaux (2001) argued that an adequate performance measure ought to give an account of all the consequences of investments, on the wealth of shareholders who invest in the business to increase their wealth. Thus the measurement of performance of the firm must give an indication of how wealthier the shareholder has become as a result of the investment over a specific time. The studies concluded that ROA and ROE ratios are good measures of financial performance since they had consistently shown robust results and have become the key indicators of whether the firm is achieving the owners' objectives of making them wealthier (Okiro et al., 2015). In addition, these indicators can be used to compare the firm's ratios with other firms or to find out the trends of performance over time. The key area of concern of this study is the profitability of the firms as measured by ROA. Thus this study adopted ROA as a measured financial performance, since it has proved to be more robust and the most commonly used accounting-based ratio (Goddard et al., 2005; Okiro et al., 2015).

Specific Objectives of the Study

The specific objectives of the study are as follows

   i.   To establish the effect of Asset Tangibility on financial performance among listed non-financial firms at NSE, Kenya.

  ii.   To examine the effect of Firm Growth on financial performance among listed non-financial firms at NSE, Kenya.

 iii.   To find out the effect of Firm Age on financial performance among listed non-financial firms at NSE, Kenya.

Materials and Methods

Data Collection Procedure

Panel data on firm characteristics and financial performances were collected from secondary sources as African Stock Market Companies, Capital Markets Authority, Annual reports of the non-financial firms, Nairobi Securities Exchange publications and URL of the Nairobi Securities exchange for ten-year period of 2009 to 2018.

Sampling Procedure

The Nairobi Securities Exchange (NSE) had 40 non-financial firms representing 7 business sectors as at 31st December, 2018. Out of the 40 non-financial firms 33 firms were selected for the present study using judgmental sampling.

Methodology

The purpose of this section was to describe the research methodology of the study. Since the objective of the study was to test the effect of firm characteristics on financial performance, the design of the methodology was based on prior research into these relationships. This part describes the method of data collection, the variables used to test the hypothesis and statistical techniques employed to report the results. The regression model adopted by this study was based on the models used by (Kalkani *et al.*, 1998). The research hypotheses were tested by using multiple regression model by regressing firm characteristics against financial performance (ROA) to establish the individual effects on financial performance as shown in the regression analysis below;

$$Y_{ROA} = \beta_o + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \varepsilon$$

Where; Y_{ROA} = Financial performance as measured by ROA. β_o =constant; β_1, β_2 and β_3 =Regression coefficients, X_1, X_2 and X_3 = Asset Tangibility, Firm Growth and Firm Age, and ε = error term.

Conceptual Framework

The following conceptual model was formulated through the extensive literature as displayed in figure 1 below.

Capital Structure   **Financial Performance**
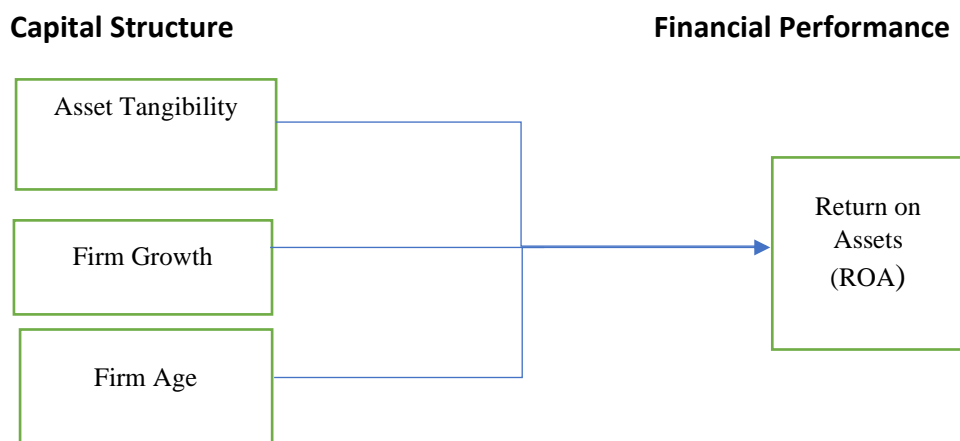

Figure 1: Conceptualization Model

The above model shows the relationship between firm characteristics and financial performance.

Research Hypotheses

H_{01}: Asset Tangibility has no significant effect on financial performance among listed non-financial firms at NSE, Kenya.

H_{02} : Firm Growth has no significant effect on financial performance among listed non-financial firms at NSE, Kenya.

H_{03} : Firm Age Ratio has no significant effect on financial performance among listed non-financial firms at NSE, Kenya.

Results and Discussions
Analysis and Interpretation
This section presents and explains the results from the data collected and the findings are presented and analysed in respect to the specific objectives and hence testing the hypotheses of the study. It also covers data analysis, interpretation and discussion of the research findings. The results were presented in the form of frequency tables.

Descriptive Statistics
This section presents the descriptive analysis results of the firm characteristics (TAN, GROW and Agelist) and financial performance (ROA) as shown in table 3.1 below below.

Table 3.1
Descriptive Statistics of Firm Characteristics

Firm Characteristics	N	Minimum	Maximum	Average Mean	Std. Deviation
Asset Tangibility (TAN)	33	0.122	0.921	0.587	0.227
Firm Growth (GROW)	33	-0.504	0.543	0.069	0.195
Firm Age (Agelist)	33	6.5	64.5	36.83	16.63
Return on Assets (ROA)	33	-0.325	0.343	0.049	0.125

From table 3.1 above, asset tangibility (TAN) had the minimum value of 0.122 and maximum value of 0.921 for the 10-year period under study (2009-2018). The average mean value was 0.587 and the standard deviation was 0.227. Firm growth (GROW) had a minimum of -0.504 and maximum of 0.543; average mean of 0.069 and standard deviation of 0.195 during the period under study. Firm Age (Agelist) had a minimum of 6.5 and maximum of 64.5; average mean of 36.83 and standard deviation of 16.63. Further, ROA had a minimum of -0.325 and maximum of 0.343; average mean of 0.049 and standard deviation of 0.125 for the period under study.

Correlation Analysis
Before testing the hypothesis, the study assessed the overall associations and correlation between the independent and the dependent variables conceptualized in the study. Correlation analysis was conducted using pair-wise correlation coefficient technique, partial and semi-partial correlation analysis to examine the existence of an association between firm characteristics indicators and financial performance (ROA) of non-financial firms listed at NSE. The correlation results between Asset tangibility (TAN) and financial performance (ROA) established a strong negative significant association (β = -0.17, p=0.000) at 0.05 level of significance. The analysis also disclosed that there existed a strong positive correlation between GROW (β =0.393, p=0.0000) and the financial performance (ROA). The results of firm age (Agelist) and financial performance disclosed an insignificant association (β = 0.072, p=0.188).

Hypothesis Testing
Multiple regression analysis between firm characteristics (TAN, GROW and Agelist) against financial performance as measured by Return on Assets (ROA) was carried out to establish the nature of effect and conclusion of the hypotheses. The study used the t-tests statistics of the three variables to show the significance of each factor in explaining financial performance of the firms and to ascertain the proposition whether the null hypotheses were accepted or not. The results of the regression model are as shown in table 3.3 below.

Table 3.3
Regression Results

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. xtreg ROA TAN GROW AGElist, fe

Fixed-effects (within) regression          Number of obs      =         330
Group variable: Firms                      Number of groups   =          33

R-sq:   within  = 0.1989                   Obs per group: min =          10
        between = 0.0095                                  avg =        10.0
        overall = 0.0036                                  max =          10

                                           F(3,294)           =       24.32
corr(u_i, Xb)   = -0.8290                  Prob > F           =      0.0000


        ROA |      Coef.   Std. Err.        t    P>|t|     [95% Conf. Interval]
------------+----------------------------------------------------------------
        TAN | -.1412981    .0654408     -2.16    0.032    -.2700898   -.0125064
       GROW |  .1647305    .0319375      5.16    0.000     .1018753    .2275856
    AGElist | -.008298     .0019647     -4.22    0.000    -.0121646   -.0044313
      _cons |  .4264826    .081982       5.20    0.000     .2651366    .5878286
------------+----------------------------------------------------------------
    sigma_u |  .16666438
    sigma_e |  .09931663
        rho |  .73794947   (fraction of variance due to u_i)
----------------------------------------------------------------------------
F test that all u_i=0:      F(32, 294) =      5.58             Prob > F = 0.0000
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*Significance level at 0.05

The results presented in table 3.3 above shows that the overall R-Square statistic (R^2 = 0.0036) and F test statistic (F=24.32, p-value<0.05) which implies that there is fitness of the model. The coefficient of determination (R^2) also implied that 0.36% of the variation in financial performance of non-financial firms was explained by firm characteristics; and the difference was accounted for by other variables not included in the model. The model also revealed that firm characteristics as measured by asset tangibility, firm growth and age list all had statistically significant effects on financial performance (β= -0.14130, t = -2.16, p-value<0.05; β=-0.16473, t = 5.16, p-value<0.05; β= -0.00829, t = -4.22, p-value<0.05 respectively), failing to accept the null hypothesis and concluded that firm characteristics leads to decrease in the financial performance of non-financial firms as measured by asset tangibility (TAN) and age list (Agelist) consistent with the study by Zeitun and Tian (2007) and increase in financial performance as measured by firm growth (GROW) which was consistent with the studies by (Ochingo and Muturi, 2018; Mwebia, 2017). Thus the estimated formulated equation by substituting the beta coefficients of the regression results in the following form:

FP_{it} = 0.426 - 0.141TAN + 0.165GROW - 0.008Agelist + μ_{it} + ε_{it}

The outcome of the equation above implies that a unit increase in the use of asset tangibility (TAN) and age list (Agelist) results in a decrease of financial performance of 14.1 percent and 0.8 percent respectively, while a unit increase in firm growth (GROW) leads to an increase of 16.5 percent in financial performance as measured by ROA. This means that non-financial firms may need to utilize more efficient assets portfolio which minimizes maintenance costs and focus on productive assets growth since it enhances the value of the firms.

Conclusions
The findings of the regression analysis showed that firm characteristics indicators had statistically significant effect on financial performance of non-financial firms listed at NSE. This implies that the firm characteristics components which include: asset tangibility, firm age and firm growth plays a critical role with respect to the financial performance of the non-financial

firms. This means that inclusion and consideration of the firm characteristics by non-financial firms listed at NSE is beneficial to the firms since it increases financial performance. The literature reviewed revealed mixed results and significant relationship between firm characteristics and financial performance. The results were consistent with the studies of: Campello (2007); Maggina and Tsaklanganos (2012); Ochingo and Muturi (2018); Mwebia (2017); Pouraghajan *et al* (2012) which revealed significant association between firm characteristics indicators and financial performance.

The findings of this study contribute to the existing body of knowledge in the area of firm characteristics and financial performance. The study findings are also beneficial to financial institutions practice and theory. The study would guide future researches on firm's management especially on making sound business decisions of non-financial firms at and sanction viable projects that improve securities returns and maximize wealth for the shareholders. Future researchers should diversify the operationalization of financial performance to include other accounting measures which includes; Return on Equity (ROE) and market measures (Tobin's Q and EPS) to enhance comparability of the results. Further, in order to broaden the understanding of the effect of firm characteristics on financial performance by including other indicators not captured by this study which includes; capital adequacy, asset quality, operational efficiency, firm size, leverage and liquidity to establish the nature of effect. Further, this study should be replicated in the privately held firms not listed at NSE, financial firms, different geographical regions and also in other countries to establish the nature of results and effect. Such replication could further determine whether the findings of this study hold true for other firms or countries with diverse cultural, regulatory, governance and management contexts. This will enhance wider understanding of the relationship between firm characteristics and financial performance in different contexts and environments.

References

Campello, M. (2007). Asset Tangibility and Firm Performance under External Financing: Evidence from Product Markets. *National Bureau of Economic Research.* Accessed from: https://ssrn.com/ on 16th January, 2020.

Chukwudi, E. J. (2018). Effect of Firms' Growth Indices on Profitability of Food & Beverage Firms in Nigeria. *Research Journal of Finance and Accounting,* 9(7), 2222-2847.

Coad A. (2016). Strategies for Firm Growth. *The Palgrave Encyclopedia of Strategic Management. Palgrave Macmillan, London.* Accessed from https://link.springer.com/

Dogan, M. (2013). Does firm size firm profitability affect? Evidence from Turkey. *Research Journal of Finance and Accounting,* 4(4), 53-59

Easterby-Smith, M., Thorpe, R. & Jackson, P. (2011). *Management Research*. London: Sage.

Gujarati, N. D. (2003). *Basic Econometrics* (4th ed.). New Delhi, DN: McGraw Hill.

Kaguri, A. W. (2013). *Relationship between firm characteristics and financial performance of life insurance companies in Kenya*. https://chss.uonbi.ac.ke. Accessed on 11th July, 2019.

Kisengo, Z. M., & Kombo, H. (2014). Effect of Firm Characteristics on Performance of the Microfinance Sector in Nakuru, Kenya. International Journal of Science and Research (IJSR) *Journal of Finance and Accounting*, 3(10), 1791-1799.

Kothari, C. (2014). *Research methodology: methods and techniques. Jaipur, Rajasthan, India*: New Age International Publishers, New Delhi. www.researchgate.net accessed on 12th June, 2019.

Kogan, L. & Tian, M. (2012). Firm Characteristics and Empirical Factor Models: A Data-Mining Experiment. *International Finance Discussion papers*, 1070.

Maggina, A., & Tsaklanganos, A. (2012). Asset growth and firm performance. Evidence from Greece. *The International Journal of Business and Finance Research*, *06*(02), 113-124.

Maina, E. K., Gachunga, H., Muturi, W., & Ogutu, M. (2017). Influence of Firm Characteristics on the Impact of Disclosure and Transparency in the Performance of Companies Listed in Nairobi Securities Exchange. *International Journal of Scientific Research and Management (IJSRM), 5(9), 6994-7007*

Mboi, C. S., Muturi, W., & Wanjare, J. (2018). Moderating Effect of Firm Characteristics on the Relationship Between Capital Structure and Financial Performance of Medium-sized and Large Enterprises in Kenya. *Journal of Economics and Sustainable Development, 9(18),* 112-132

Mulwa, J. M. (2016). Moderating effect of Firm Characteristics in the Financing Diversification–Performance nexus among Credit Unions in Kakamega County, Kenya. *International Journal of Management and Information Technology, 11(5),* 2988-2993

Mutende, E. A., Mwangi, M., Njihia, J. M., & Ochieng, D. E. (2017). The moderating role of firm characteristics on the relationship between free cash flows and financial performance of firms listed at the Nairobi securities exchange, *Journal of Finance and Investment Analysis*, *6(4),* 55-74

Mutunga, D., & Owino E. (2017). Moderating Role of Firm size on the relationship between Micro Factors and Financial Performance of Manufacturing Firms in Kenya. *Journal of Finance and Accounting, 1(1),* 14 - 27.

Mwebia, R. K. (2017). The effects of selected firm characteristics on financial performance of listed Nairobi Securities Exchange in Kenya. https://chss.uonbi.ac.ke. Accessed on 5th September, 2019.

Nawaiseh, R. S. (2015). Do profitability and size affect financial leverage of Jordan industrial listed companies? *European Journal of Business and Innovation Research, 3(5),* 1-12.

Njiraini, W. W., Mwangi M., Kaijage E., & Ganesh P. (2021). Moderating Effect of Firm Characteristics on the Relationship between Electric Power Outage Dynamics and Financial Performance of Manufacturing Firms in Kenya. *European Scientific Journal, 17(1),* 256-273

Ochingo, M. A., & Muturi, W. M. (2018). Effect of firm characteristics on financial performance of savings and credit cooperatives society in Kenya. *The Strategic Journal of Business & Change Management. 5(1),* 769-784.

Short, J. C., Ketchen, D. J., Jr, Palmer, T. B., & Hult, G. T. (2007). Firm strategic group and industry effects on performance. *Strategic Management Journal*, *28(2),* 147-167.

Soliman, W. S. (2019). The Moderating Effect of Firm Characteristics on the Association Between Accounting Conservatism and Cash Holdings. *International Journal of Accounting and Financial Reporting, 9(4),* 216-308

Too, I. S., & Simiyu, E. (2018). Firms characteristics and financial performance of general insurance firms in Kenya. *International Journal of Business Management & Finance, 1(39),* 672-689

Torres-Reyna, O. (2007). *Panel Data Analysis of Fixed and Random Effects using Stata.* http://dss.princeton.edu/training/ Accessed on 16th January, 2020.

Wakaisuka, J. (2015). Corporate governance, firm characteristics, external environment and performance of financial institutions in Uganda. Accessed from: *https://*chss.uonbi.ac.ke*.* Accessed on 5th November, 2019.

Waweru, N. M., & Riro, G.K. (2013). Corporate Governance, Firm Characteristics and Earnings Management in an Emerging Economy. *Journal of Accounting and*

Winston, P., & Novi, S. B. (2018). Firm characteristics and capital structure adjustment. *Investment Management and Financial Innovations*, *15(2),* 129-144.