

Journal of Economics



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ISSN: 2617-5800

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How to cite this article: Akims, M. A., Motende, W. N., Akims, K. A., & Nyabute S. (2026). Firm Characteristics, Tax Planning and Financial Performance of Commercial and Service Firms Listed at The Nairobi Securities Exchange, Kenya. *Journal of Economics*, Vol 10(1) pp. 77-98. <https://doi.org/10.53819/81018102t2563>

Abstract

Commercial and service firms listed at the Nairobi Securities Exchange, Kenya have over the years been faced with issues of declining financial performance. The study sought to examine the effect of firm characteristics on financial performance of commercial and service firms listed at the Nairobi Securities Exchange, Kenya. The moderating effect of tax planning on the relationship between firm characteristics and financial performance of commercial and service firms listed at the Nairobi Securities Exchange, Kenya was further established. In line with the rationale for the study, explanatory research design was adopted. Panel data were used and consequently panel regression analysis was employed. The study concluded that liquidity and firm age exert insignificant effect on financial performance. Firm size registered a significant effect on financial performance. The study established that tax planning plays an insignificant role in the relationship between firm characteristics and financial performance. In view of the negative firm size effect, firms are recommended to put in place measures geared towards minimizing bureaucratic inefficiencies associated with asset expansion while leveraging technology to improve operational efficiency. Rather than just asset expansion, growth strategies should also prioritize productivity and optimal resource utilization so as to maximize the benefits of economies of scale attributed to firm size. Further studies can be conducted in view of the insignificant direct effects established

<https://doi.org/10.53819/81018102t2563>

with regards to liquidity and firm age as well as the moderation effect of tax planning. Additional studies can re-examine the effects of liquidity and firm age on financial performance of commercial and service firms listed at the Nairobi Securities Exchange, Kenya focusing on whether the relationships are non-linear rather than linear. The moderation effect model had firm characteristics as a composite variable, further studies should disaggregate firm characteristics so as to capture specific effects based on separate interaction of tax planning with each component.

Keywords: *Firm Age, Firm Characteristics, Firm Size, Liquidity, Profitability and Tax Planning*

1.1 Introduction

Globally, listed firms have been identified as vital engines which facilitate resource mobilization towards economic growth and development (Nyamiobo, 2023). Securities firms play a crucial role towards driving stock market growth and in general economic growth by facilitating the circulation of securities to investors from issuers. These firms create market liquidity by mobilizing funds and allocating to areas in need, hence ensuring the efficient conversion of stocks into cash and vice versa (Nguyen, Ha, Nguyen & Nguyen, 2025). In addition, through the role of securities firms in market-making and proprietary trading, the regulation and stabilization of the stock market is enhanced. A well-functioning securities sector functions towards contributing to a sound and developed financial system in a significant manner. Hence, the analyses of the factors which influence performance will enable securities firms in developing effective and efficient strategies, sustain competitiveness while adapting to market fluctuations.

In the context of Jordan, the service sector with profitability being its considerable concern, stands as one of the highest contributors to economic growth by accounting for 31.8 percent of Gross Domestic Product (GDP), hence its operational and economic significance (Aldboush, Almasria, & Ferdous, 2023). In the context of Vietnam, the trade and service industry is considered to be distinct such that its performance is largely dependent on intangible resources which include customer relationships, brand reputation and managerial capacity (Tao, Lin, Hien & Tai, 2026). Commercial and service sector consist of firms which engage in the buying and selling of products and services based on unique characteristics of fulfilling an intermediary role of connecting producers with end consumers. While undertaking the intermediary role, these firms provide storage, transfer, distribution and sale of products and services (Onsongo, Muathe & Mwangi, 2020).

The performance of listed firms at the Nairobi Securities Exchange is significant in providing an avenue for investment opportunities towards the attainment of the vision 2030 of Kenya (Nyamiobo, (2023). Commercial and service firms provide employment opportunities, enhance economic flexibility, increase upward social mobility while contributing to the economic growth of Kenya (Wanzala & Obokoh, 2024). In view of achieving long-term growth and addressing the economic development challenges of Kenya, the financial performance of commercial and service firms list at the Nairobi Securities Exchange is of paramount importance. The financial performance of listed commercial and service firms in Kenya as denoted by profitability has been characterized by a declining trend, this position was similarly documented by Sawe and Makori (2022) and Lomwai (2024). The profitability (return on assets) of commercial and services firms in Kenya declined from 3.3 percent in December, 2021 to 2.7 percent in December 2022 as a result of decreased financing activities of listed firms (Moenga, Nyangau & Okioga, 2024). Profitability denotes the performance of businesses (Víghová, Košovská & Hudáková, 2023). Profitability does not operate in a vacuum; hence it is influenced by driving factors which need to be comprehensive

<https://doi.org/10.53819/81018102t2563>

studied for it to be maximized (Aldboush *et al.*, 2023). Arhinful and Radmehr (2023) indicated that the extent by which a firm generates profit from its primary business activity reflects its financial performance. Consequently, the financial performance of a firm over a time period can be regarded as an indicator of its overall financial health (Kantudu, Kurawa & Garba, 2026).

Financial performance depicts the extent by which firms generate income while utilizing organizational resources to meet investors' needs and those of other critical stakeholders. Azzah, Santoso, Wahyuni and Kusbandiyah (2025) indicated that financial performance is important in the evaluation of health and sustainability of the operations of firms. Firm characteristics refer to internal attributes of firms which are influenced by organizational policies and management decisions. These attributes influence the resource management, adaptation to dynamic market conditions and operational efficiencies of firms (Nkasi & Mide, 2025). Firm characteristics include but not limited to liquidity, firm age and firm size. Firm characteristics and financial performance nexus have been analyzed by various studies which include Odu, Atu and Ozele (2023), Nyamiobo (2023), Azzah *et al.* (2025), Nguyen *et al.* (2025), Oladapo, Adewumi, Fawedikimo, Adeshola, Iyadi and Faruna (2025) and Listy and Imronudin (2026). These studies are however characterized by various research gaps cutting across contextual, conceptual, knowledge and empirical gaps. In view of this, the current study sought to establish the effect of firm characteristics and moderating effect of tax planning on financial performance of commercial and services firms listed at the Nairobi Securities Exchange, Kenya.

1.3 Objectives of the Study

The study was guided by the general and specific objectives.

1.3.1 General Objective

The general objective of the study was to assess the effect of firm characteristics on financial performance of commercial and service firms listed at the Nairobi Securities Exchange, Kenya

1.3.2 Specific Objectives

The study was guided by the following specific objectives:

- i) To determine the effect of liquidity on financial performance of commercial and service firms listed at the Nairobi Securities Exchange, Kenya.
- ii) To evaluate the effect of firm age on financial performance of commercial and service firms listed at the Nairobi Securities Exchange, Kenya.
- iii) To examine the effect of firm size on financial performance of commercial and service firms listed at the Nairobi Securities Exchange, Kenya.
- iv) To establish the moderating effect of tax planning on the relationship between firm characteristics and financial performance of commercial and service firms listed at the Nairobi Securities Exchange, Kenya.

1.4 Research Hypotheses

In line with the specific objectives, the following null hypotheses were formulated and tested:

H₀₁: Liquidity has no significant effect on financial performance of commercial and service firms listed at the Nairobi Securities Exchange, Kenya.

H₀₂: Firm age has no significant effect on financial performance of commercial and service firms listed at the Nairobi Securities Exchange, Kenya.

<https://doi.org/10.53819/81018102t2563>

H₀₃: Firm size has no significant effect on financial performance of commercial and service firms listed at the Nairobi Securities Exchange, Kenya.

H₀₄: Tax planning has no significant moderating effect on the relationship between firm characteristics and financial performance of commercial and service firms listed at the Nairobi Securities Exchange, Kenya.

2.1 Literature Review

The literature review section documents theoretical underpinnings and empirical works central to the focus of the study which is firm characteristics and financial performance.

2.2 Theoretical Literature Review

Stakeholder theory as propounded by Freeman (1984) is prominent in the field of business and management. Stakeholders often regarded as any individuals or group who can affect and or be affected by the operations of firms are categorized as primary and secondary stakeholders with both the former and the latter considered important for business survival (Ozdemir, de Arroyabe, Sena & Gupta, 2023). For firms to be successful, it is important to contribute to value addition across various stakeholders (Akims & Alex, 2023). In view of stakeholder theory, there is emphasis that firms require support from not just their shareholders but also across various stakeholders in order to thrive. Hence, the need to go beyond shareholders' wealth maximization to satisfying the needs of stakeholders (Mahajan, Lim, Sareen, Kumar & Panwar, 2023). The profitability and ultimately survival of a firm is dependent on its effectiveness and efficiency in achieving mutual goals of stakeholders which reflects organizational purpose (McGahan, 2023). By expanding the work by Freeman, it was postulated by Donaldson and Preston (1995) that firms are morally obligated to consider the interests of all stakeholders, and that effective stakeholder management can contribute to long-term profitability. The relevance of stakeholder theory to this study emanates from the fact that the financial performance of firms is influenced by critical stakeholders within and beyond the firms.

The Resource-Based View (RBV) theory was introduced by Wernerfelt in the year 1984 and later popularized by Barney in 1991. The theory focuses on the internal resources of firms. The ability of an entity to manage and maximize resources effectively and efficiently will result in sustainable and long-term success. The ability of firms in allocating, integrating, and optimizing internal resources is central to resource-based view theory. Resource-Based View theory places emphasis on the significance of effective management of internal resources towards the achievement of competitive advantage which ultimately shapes the financial performance of firms (Wasista, Pradnyani & Wasita, 2024). Emphasis is placed on the internal resources and capabilities of firms when identifying the elements affecting profitability based on RBV (Bakke & Buøen, 2023). Firms must therefore strive towards analyzing, protecting and acquiring resources which meet the criteria of gaining sustainable competitive advantage. In view of RBV which focuses on building organizational resources and capabilities for sustained competitive advantage, the focus of the current study is firm characteristics and financial performance relationship. Firm characteristics are unique internal organizational attributes which are central to resource-based view theory.

2.3 Empirical Literature Review

The empirical literature review is guided by the direct and moderation effect relationships which the study sought to examine. The first sub-section covers review of empirical literature on the effect of firm characteristics and financial performance. The second sub-section is based on empirical literature focused on tax planning and financial performance nexus.

2.3.1 Firm Characteristics and Financial Performance

Aldboush *et al.* (2023) evaluated the determinants of firm profitability based on the service sector in Jordan. In assessing the financial factors affecting profitability across the listed Jordanian service companies, the firm effect model was adopted. Panel data were utilized covering the period 2015 to 2020 as sourced from annual company financial reports. Profitability was measured using Earnings Per Share (EPS), Return on Equity (ROE) and Return on Assets (ROA). A sample of 46 listed public service firms was used. Hypotheses testing was conducted using regression analysis and the results reveal that liquidity and firm size recorded a significant positive impact on profitability. The firm size effects were higher with regards to ROE as compared to EPS and ROA. Important insights were documented in the study for managers and investors through the provision of effective policies aimed at improving profitability. Shareholders were also provided with statistics which will ensure sustainable profits of companies which operate in developing nations such as Jordan. The current study while focusing on commercial and service firms listed at the Nairobi Securities Exchange, Kenya further evaluated the effect of firm age on financial performance.

Ehiedu and Imoagwu (2022) examined the effect of firm specifics on profitability of listed oil & gas firms in Nigeria. Profitability was proxied by return on assets while the firm specific determinants were firm size, liquidity, firm age, operating expenses, sales growth and leverage. Descriptive, correlation and multiple regression analyses were employed. Empirical findings indicate that liquidity, leverage and operating expenses had significant relationship with profitability. Conversely, it was found that firm size, firm age and sales growth had insignificant relationship with profitability. It was recommended that firm size should be increased by listed oil and gas firms for purposes of improving return on assets. While the previous study contributes to existing body of knowledge on firm characteristics and financial performance relationships, the focus was listed oil and gas firms in Nigeria. The current study further established the moderation effect of tax planning on the relationship between firm characteristics and financial performance of commercial and service firms listed at the Nairobi Securities Exchange, Kenya.

Nguyen, Pham, Truong, Phi, Le, and Vu (2023) analyzed the effect of liquidity, firm size and firm age on firm profitability of Vietnamese listed companies. Theoretically, agency theory was applied in the study and secondary data covering 300 Vietnamese firms were used for the time period 2012-2018. Empirical findings indicated that liquidity has positive relationship with profitability (ROE and ROA) in the context of Vietnam. The results further indicated that both firm size and firm age had insignificant relationship with profitability. Unlike the previous empirical work which was based on listed firms in Vietnam, commercial and service firms listed in Kenya were the focus of this study. While considering the dynamics of the tax environment, the current study examined

the moderation effect of tax planning on the relationship between firm characteristics and financial performance of commercial and service firms listed at the Nairobi Securities Exchange, Kenya.

Odu, Atu and Ozele (2023) examined the effect of corporate specific attributes on financial performance of listed firms in selected Sub-Sahara Africa Countries. Listed non-financial firms in selected Sub-Sahara African countries (Kenya, Nigeria, and South Africa) were considered for the period 2012 to 2021. The study sourced for data from the annual reports of non-financial firms in Nigeria, Kenya, and South Africa. Panel regression technique was applied based on fixed effect model as guided by the Hausman specification test. From the empirical findings, it was found that firm size had an insignificant positive effect on financial performance both in Kenya and Nigeria. However, an insignificant negative effect on financial performance was established for firm size with regards to South Africa. Liquidity based on current ratio had an insignificant positive effect on firm performance. Furthermore, asset tangibility had insignificant negative effect on financial performance of listed firms in Kenya and decreased the performance of listed firms in Nigeria. Asset tangibility minimally improves the performance of listed firms in South Africa. It was put forward that managers of SSA firms should endeavor to reinvest profits into the firm so as to increase growth and enhance financial performance. The current study differs in that it is country specific, thereby leading to unique conclusions and recommendations specific to listed commercial and service firms in Kenya.

Nkasi and Mide (2025) investigated the nexus between firm attributes and financial performance of listed manufacturing companies in Nigeria. Return on assets was used as a proxy for financial performance. Longitudinal research design was adopted. While utilizing panel data as sourced from listed manufacturing companies for the period 2015 to 2023, panel regression analysis was applied based on the fixed effect model. Results from the empirical analysis indicate that firm size has a significant positive effect on return on assets, implying that larger firms generate higher profits as a result of a wider market presence and operational efficiencies. Liquidity has significant positive effect on return on assets, indicating that firms with adequate liquidity levels are more efficient in addressing short term liabilities and in a better position to enhance returns. It was concluded that optimal firm size, prudent management of debts as well as efficient liquidity practices remain important for enhancing the financial performance of manufacturing companies in Nigeria. It was recommended that firms should ensure cautious use of debt and expansion should be strategic. It was further recommended that firms should ensure robust liquidity management geared towards improving profit level and accounting resilience. Despite Nigeria and Kenya both categorized under the African continent, each country has unique laws and regulations applicable to its stock (securities) exchange.

Oladapo *et al.* (2025) studied the effect of firm characteristics on financial performance of listed food and beverage companies in Nigeria. Financial performance was measured using return on assets while the firm characteristics considered were firm age, firm size, liquidity and leverage. Ex post facto research design was adopted and panel regression analysis was applied based on data collected for the period 2008 to 2017 for 14 firms listed at the Nigerian Stock Exchange. Empirical findings indicate that firm size and liquidity had significant positive effect on financial performance. Leverage had significant negative effect on financial performance while firm age had insignificant negative effect. It was concluded that firm characteristics are crucial determinants of financial performance of listed food and beverage companies in the context of Nigeria. The study recommended the prioritization of efficient asset utilization, implementation of strategic initiatives geared towards growth, preference for equity against debt financing in the capital

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structure of firms while enhancing liquidity management for purposes of improving financial performance. The moderation effect of tax planning on the relationship between firm characteristics and financial performance in the context of commercial and service firms listed at the NSE, Kenya was further established in the current study.

Azzah *et al.* (2025) assessed the effect of liquidity and total asset turnover on company profitability in the Jakarta Islamic Index 70. Data used as obtained from the Indonesia Stock Exchange (IDX) indicates an increasing trend in the number of investors for the last five years in view of the date which the study was published. Market capitalization of the Jakarta Islamic Index (JII) has however decreased over this period. The companies listed on the Jakarta Islamic Index 70 for the period 2021-2023 formed the population of the study. Purposive sampling technique was used which led to a sample of 182 companies. Data analysis was based on multiple linear regression technique. Empirical findings reveal that liquidity had insignificant positive effect on profitability. Total asset turnover had significant positive effect on profitability. Important implications were deduced from the study with regards to company management, that is the need for efficient utilization of assets and effective liquidity strategies geared towards increasing profitability while sustaining investment confidence in the Islamic stock market. The current study further examined the effect of firm age based on years of operations on financial performance.

Nguyen *et al.* (2025) evaluated the impact of years of operation and company size on business performance with focus on Vietnamese Securities Companies. Quantitative research method was applied based on a dataset comprising of 396 observations from 37 Vietnamese securities companies covering the time frame 2013–2023. Empirical findings indicate that company size has significant positive effect on business performance. Having strong financial resources, market dominance, technological advancements as well as extensive customer base enable large firms to explore better opportunities towards sustainable development while attaining growth in the securities market. Larger firms enjoy advantages in capital, technology, customer networks, as well as brand reputation which provides enablement for generating higher revenue and profitability in comparison with smaller firms. With regards to years of operation, the findings indicate that securities firms operating for 10 to 15 years recorded the lowest business performance, while those in the category of 5–10-year range achieved the highest. Firms having 20 to 25 years of operation perform better than those in the 10–15-year category. Interestingly, firms operating for 15 to 20 years tend to outperform those in the category of 20 to 25 years. These results are in line with real-world business trends, hence providing additional insights for practitioners in the industry. The previous empirical study focused on firms in the context of Vietnam.

Listy and Imronudin (2026) studied the effect of firm size and liquidity ratio on profitability of the financial sector in Indonesia for the 2024 Period. Profitability was measured using return on assets (ROA) and net profit margin (NPM). Quantitative design was used while secondary data sourced from the 2024 annual financial statements covering 97 financial-sector entities listed on the Indonesia Stock Exchange (IDX) were utilized. Multiple linear regression technique was used and the findings revealed that firm size has a significant effect on ROA, while insignificant on NPM. Liquidity ratio had insignificant effect on both ROA and NPM. It was recommended that strategies to improve corporate performance must consider asset scale and efficient capital structure management. By adopting a more comprehensive approach, the current study further established the moderation effect of tax planning on the relationship between firm characteristics and financial performance of commercial and service firms listed at the Nairobi Securities Exchange, Kenya.

2.3.2 Tax Planning and Financial Performance

Tax planning is aimed at reducing tax associated liabilities while in turn improving financial performance through increased profitability. Agboola, Yusuf and Yusuf (2024) analyzed corporate tax planning and financial performance relationship in the context of listed manufacturing companies in Nigeria. Tax planning was denoted by effective tax rate (ETR), tax-to-total assets (TAS) and book-tax difference (BTD) while financial performance was proxied by return on equity. The population of the study comprised of fifty-eight listed manufacturing companies in Nigeria, out of which a sample of thirty-two was selected. Panel data were collected from the financial reports of the selected companies covering the time frame 2013 to 2022. Multiple regression analysis was used and the findings indicate that ETR has insignificant negative impact on financial performance while BTD and TAS exert significant positive effect on financial performance. It was recommended that the Government should undertake a review of the issues associated with multiple taxes for companies in the manufacturing sector as this can lead to decreasing levels of ETR and in turn improve financial performance. The study further recommended that management of listed manufacturing companies in Nigeria should strive towards improving the ETR through proper timing of asset acquisition and disposal. The management were also recommended to ensure that the tax paid is less than the tax expense. It was also recommended that management should utilize debt financing for acquisition of assets so as to benefit from interest expense relief thereby lowering tax to total assets ratio. The previous empirical work was centered on listed manufacturing firms in Nigeria whereas the current study focuses on listed commercial and service firms in Kenya.

Edemeka and Umo (2024) examined the effect of tax planning on financial performance of listed consumer goods companies in Nigeria. Tax planning was proxied by effective tax rate, capital intensity and debt tax shield while financial performance was measured using return on assets. Ex-post facto research design was used and secondary data were collected covering the period 2013 to 2022. The study covered a population of 21 listed consumer goods companies in Nigeria and a sample of 18 was arrived at based on purposive sampling technique. The analysis of data was based on ordinary least square regression technique and the findings indicate that effective tax rate has insignificant negative effect while debt tax shield has significant positive effect on financial performance. Capital intensity however has insignificant positive effect on financial performance of listed consumer goods companies in Nigeria. It was concluded that tax planning activities impact on the financial performance of listed consumer goods companies in Nigeria. It was recommended that long term tax planning should be the focus of listed consumer goods companies rather than solely focusing on effective tax rate reduction. The available tax incentives should be explored by management of listed consumer goods companies. The findings of the previous study are however limited to Nigeria since tax laws and regulations vary from country to country.

Siyanbola and Durosinmi (2025) investigated the effect of corporate tax planning on financial performance of listed food and beverages companies in Nigeria. Ex-post facto research design was adopted and the population consisted of 15 listed food and beverages companies in Nigeria. The sample comprised of 10 companies and secondary data were sourced from the financial statements of the sample for the period 2014 to 2023. Descriptive and regression analyses were employed and it was found that corporate tax planning has significant effect on financial performance of listed food and beverages companies in Nigeria. In order to avoid over-leveraging while still benefiting from debt financing, the study recommended that there should be adequate management of capital

intensity by managers of food and beverages companies in Nigeria. Despite the contribution of the study to existing body of literature, the focus was listed food and beverages companies in Nigeria.

Olanisebe, Obafemi and Yadok (2025) evaluated the impact of corporate tax planning on financial performance of listed consumer goods firms in the context of Nigeria. Causal research design was used and the population was made up of 21 listed consumer goods firms in Nigeria as at December 31st, 2024. A sample of 16 listed consumer goods firms was selected. Based on the time scope of 2015 to 2024, secondary data were sourced from the annual financial reports of the selected firms. Data were analyzed using descriptive, correlation and regression techniques. It was established that cash effective tax rate and effective tax rate insignificantly impact on financial performance. It was recommended that management should avoid overreliance on reducing cash effective tax rate and effective tax rate as strategies for enhancing financial performance. Management should rather concentrate on minimizing costs, enhancing internal operations as well as improving product competitiveness. Despite the importance of this study in contributing to existing body of literature on tax planning and financial performance relationships, the implications of the findings may be limited to listed consumer goods firms in the context of Nigeria. The focus of the current study is commercial and service firms listed at the NSE, Kenya.

3.1 Research Methodology

Causal research design was applied which is ideal for studies focused on cause-and-effect relationships. Panel data were utilized covering the period 2015 to 2022. Panel regression analysis was employed based on direct and moderation effect analyses.

Where:

$$FP_{it} = \beta_0 + \beta_1 LQ_t + \beta_2 FA_t + \beta_3 FS_t + \varepsilon \dots \dots \dots 3.1$$

Where:

- FP_{it} = Financial Performance (Return on Assets)
- LQ_{it} = Liquidity (Current Assets/ Current Liabilities)
- FA_{it} = Firm Age (Years of Operation)
- FS_{it} = Firm Size (Total Assets)
- i = Firm
- t = Time Period (2015 to 2022)
- β₁, β₂, β₃ = Coefficients
- ε = Error term

3.4.2 Moderation Effect Model

The approach by Whisman and McChelland (2005) was adopted in testing for moderation effect. The approach is based on a two-step procedure with the first step introducing the composite of firm characteristics (liquidity, firm age and firm size) and tax planning as explanatory variables. The second step presents the composite of firm characteristics, tax planning and the interaction of the composite of firm characteristics with tax planning (Firm characteristics*Tax Planning) as explanatory variables. To assess the moderation effect of tax planning on the relationship between firm characteristics and financial performance, models 3.2 to 3.3 were estimated.

3.4.2.1 Step One

$$FP_{it} = \beta_0 + \beta_1 FC_{it} + \beta_2 TP_{it} + \varepsilon \dots \dots \dots 3.2$$

3.4.2.2 Step Two

$$FP_{it} = \beta_0 + \beta_1 FC_{it} + \beta_2 TP_{it} + \beta_3 FC * TP_{it} + \epsilon \dots \dots \dots 3.3$$

Where:

FC = Firm Characteristics

TP = Tax Planning

FC*TP= Interaction between Firm Characteristics and Tax Planning

i,t = Firm i at time t

Table 3.1 provides the decision criteria for the test of moderation effect of tax planning on the relationship between firm characteristics and financial performance.

Table 3.1 Decision Criteria for Moderation Test

Scenario	Model One	Model Two	Conclusion
One	β_2 is statistically significant	β_3 is statistically insignificant	Tax planning is an explanatory variable
Two	β_2 is statistically insignificant	β_3 is statistically significant	Tax planning has a moderation effect

Source: Whisman and MacClelland (2005)

Table 3.1 provides two scenarios, one indicating tax planning as an explanatory variable and the second indicating tax planning as a moderating variable. In the case where scenario one occurs, then it can be concluded that tax planning is not a moderating variable but an explanatory variable. Conversely, the occurrence of scenario two implies that tax planning is a moderating variable (Whisman & MacClelland, 2005).

4.1 Data Analysis and Discussions

The analysis of data was based on descriptive and inferential statistics. The analysis and presentation of findings are guided by the objectives of the study.

4.2 Descriptive Analysis

The descriptive analysis presents statistics covering total observations, mean, standard deviation, minimum and maximum values of the study variables as documented in Table 4.1.

Table 4.1: Descriptive Statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
Financial Performance	59	.5620688	1.015744	0	7.816387
Liquidity	58	2.379066	4.681103	.000544	31.72358
Firm Age	56	62.46429	31.51448	16	120
Firm Size	58	6.346135	1.300984	3.974595	9.105164
Tax Planning	56	2.931021	7.082453	-.9906414	47.24604

Source: Study Data (2023)

The descriptive analysis indicates that the study was based on unbalanced data as evidenced by the varying statistics in view of total observations. Specifically, financial performance had the highest total number of observations of 59 while both liquidity and firm size recorded 58 each as total number of observations. Firm age and tax planning each had 56 as total number of observations. This further highlights the unbalance trend in the study data. Despite the status of

the research data, this was not considered to be a potential source of measurement error since the STATA software was utilized in the analysis of data.

Financial performance had mean of 0.56 and standard deviation of 1.02 which indicate variation over the study period, hence evidencing the research problem. Liquidity recorded mean of 2.38 and standard deviation of 4.68 while minimum number of observations was 0.00 and maximum number of observations 31.72. These statistics imply that the liquidity position of commercial and service firms listed at the NSE highly varied over the period 2015 to 2022. Firm age recorded 62.46 as average years of operations and a corresponding standard deviation of 31.51. The youngest and oldest firms recorded 16 and 120 years of operations respectively, implying that the commercial and service firms listed at the NSE are characterized by a mixture of old and relatively new firms.

Firm size had mean and standard deviation values of 6.35 and 1.30 respectively over the period of the study, implying that the total assets holdings of the listed firms relatively fluctuated within this period as further supported by minimum value of 3.97 and maximum value of 9.11. Theoretically, economies of scale are expected to be achieved by large firms in cases where full potentials and capacity of such firms are maximized. Tax planning had mean of 2.93, standard deviation of 7.08, minimum value of -0.99 and maximum value of 47.25, implying that some of the firms covered incurred high tax liabilities whereas some recorded low tax expenses within the period 2015 to 2022

4.3 Diagnostic Tests

Diagnostic tests have been conducted in order to satisfy the requirements for panel regression analysis. Fulfilling these requirements in turn validates the findings of the study. Tests for normality, heteroskedasticity, multicollinearity, stationarity and model specification were carried out.

4.3.1 Normality Test

In assessing the distribution of the research data, normality test was conducted using Shapiro Wilk test. The results from the test are documented in Table 4.2.

Table 4.2: Normality Test Results

Variable	Obs	W	V	Z	Prob>z
Financial Performance	59	0.37078	33.746	7.577	0.00000
Liquidity	58	0.46836	28.125	7.178	0.00000
Firm Age	56	0.88937	5.691	3.733	0.00009
Firm Size	58	0.93370	3.507	2.699	0.00347
Tax Planning	56	0.40949	30.378	7.329	0.00000

Source: Study Data (2023)

In view of the results presented in Table 4.2, the study variables are characterized by a non-normal distribution. The non-normal distribution of the study data is evidenced by the presence of p-values below the threshold of 0.05. Despite the existence of non-normal distribution of the data for the research variables, this issue was not regarded to be of concern since the data covered the period 2015 to 2022 based on observations of >30. This position is further upheld by Akims (2016).

4.3.2 Heteroskedasticity Test

Heteroskedasticity test was conducted in order to establish whether the error term from the regression model has constant variance. Breusch-Pagan test procedure was used and the findings are presented in Table 4.3.

Table 4.3: Heteroskedasticity Test Results

Breusch-Pagan / Cook-Weisberg test for heteroskedasticity
Ho: Constant variance
Variables: fitted values of Financial Performance
chi2(1) = 18.31
Prob > chi2 = 0.0000

Source: Study Data (2023)

The null hypothesis states that the residuals are constant. A p-value of 0.000 was obtained, the null hypothesis was therefore rejected. In addressing the issue of heteroskedasticity, the robust standard estimators were applied.

4.3.3 Multicollinearity Test

In determining the level of collinearity among the predictor variables, the multicollinearity test was carried out based on the Variance Inflation Factor (VIF). The results are contained in Table 4.4.

Table 4.4: Multicollinearity Test

Variable	VIF	1/VIF
Liquidity	1.12	0.890631
Firm Age	1.16	0.864879
Firm Size	1.13	0.888504
Tax Planning	1.09	0.918103
Mean VIF	1.12	

Source: Study Data (2023)

The threshold adopted for the VIF test was 2. The output documented in Table 4.4 indicates that all predictor variables namely: liquidity, firm age, firm size and tax planning were below 2. The outcome of the VIF test is desired in a panel regression analysis where low collinearity among predictors is required.

4.3.4 Stationarity Test

Test evaluating the stationarity level of data is conducted in panel regression analysis due to the time series aspect of panel data. The Fisher-type test for stationarity was used based on the Augmented Dickey–Fuller (ADF) procedure. The outcome of the stationarity test is documented in Table 4.5.

Table 4.5: Stationarity Test Results

Variable	Statistic	P-value	Comment
Financial Performance	34.7682	0.0043	Stationarity
Liquidity	27.8443	0.0149	Stationarity
Firm Age	0.7658	1.0000	Unstationarity
Firm Size	105.5701	0.0000	Stationarity
Tax Planning	48.1951	0.0000	Stationarity

Source: Study Data (2023)

The results of the stationarity test reveal that all the research variables with the exception of firm age were stationary. This implies that only firm age contained unit root. Despite the presence of unit root in one of the study variables, the issue was ignored since the other variables were stationary.

4.3.5 Model Specification Test

The model specification test aims at selecting the most appropriate model for estimation between the fixed effect and random effect models. The hausman specification test procedure was utilized and the outcome presented in Table 4.6.

Table 4.6: Model Specification Test Results

	(b) Fixed	(B) Random	(b-B) Difference	sqrt(diag(V_b- V_B)) S.E.
Liquidity	-.0003441	-.0177154	.0173714	.
Firm Age	-.0843131	.0002724	-.0845855	.0554836
Firm Size	-.6607862	-.2455173	-.4152689	.264041
Tax Planning	-.0003441	-.0177154	.0173714	.
Chi2(3)	2.18			
Prob>Chi2	0.5350			

Source: Study Data (2023)

The results from the hausman specification test indicate a p-value of 0.5350. The null hypothesis which favoured the random effect model was upheld. In view of this outcome, the random effect model was considered appropriate and subsequently utilized for estimation and inferential analysis.

4.4 Panel Regression Analysis

The panel regression analysis was based on direct effect and moderation effect analyses in line with the specific objectives of the study.

4.4.1 Direct Effect Analysis

The direct effect analysis evaluates the effect of liquidity, firm age and firm size on financial performance of commercial and service firms listed at the Nairobi Securities Exchange, Kenya. The findings are contained in Table 4.7.

Table 4.7: Direct Effect Results

Financial Performance	Coef.	Robust Std. Err.	Z	P>z	[95% Conf. Interval]
Liquidity	-.0177154	.0129291	-1.37	0.171	-.043056 .0076251
Firm Age	.0002724	.002525	0.11	0.914	-.0046765 .0052213
Firm Size	-.2455173	.1468014	-1.67	0.094	-.5332427 .0422081
_cons	2.173185	1.137045	1.91	0.056	-.0553828 4.401752
R-sq	0.0902				
Wald chi2(3)	3.26				
Prob > chi2	0.3530				

Source: Study Data (2023)

The output from the direct effect analysis as documented in Table 4.7 indicates that liquidity had negative effect on financial performance of commercial and service firms listed at the Nairobi Securities Exchange, Kenya. Conversely, firm age had positive effect on financial performance of commercial and service firms listed at the Nairobi Securities Exchange, Kenya. Firm size had negative effect on financial performance of commercial and service firms listed at the Nairobi Securities Exchange, Kenya.

4.4.2 Moderation Effect Analysis

The moderation effect of tax planning on the relationship between firm characteristics and financial performance of commercial and service firms listed at the Nairobi Securities Exchange, Kenya was examined. The moderation effect analysis was guided by the approach by Whisman and McChelland (2005) which is based on a two-step procedure as depicted in Table 4.8 and Table 4.9.

Table 4.8: Moderation Effect Step One Results

Financial Performance	Coef.	Std. Err.	Z	P>z	[95% Conf. Interval]
Firm Characteristics	-.0085303	.021702	-0.39	0.694	-.0510654 .0340047
Tax Planning	.0101674	.0195279	0.52	0.603	-.0281065 .0484414
_cons	.7649785	.5677944	1.35	0.178	-.347878 1.877835
R-sq	0.0079				
Wald chi2(3)	0.44				
Prob > chi2	0.8024				

Source: Study Data (2023)

The first step of the moderation effect analysis as captured in Table 4.8 presents the composite of firm characteristics and tax planning as a function of financial performance. The non significance of tax planning and financial performance nexus (p-value 0.60) in the first step of the moderation analysis satisfies the requirement to proceed to step two. The step two of the moderation effect analysis presents the composite of firm characteristics, tax planning and the interaction between firm characteristics and tax planning (firm characteristics*tax planning) as a function of financial performance as documented in Table 4.9.

Table 4.9: Moderation Effect Step Two Results

Financial Performance	Coef.	Std. Err.	Z	P>z	[95% Conf. Interval]
Firm Characteristics	-.0040857	.0248839	-0.16	0.870	-.0528573 .044686
Tax Planning	.0716981	.0909526	0.79	0.431	-.1065658 .249962
Firm Characteristics*Tax Planning	-.0026915	.0038827	-0.69	0.488	-.0103014 .0049184
_cons	.6580352	.646298	1.02	0.309	-.6086856 1.924756
R-sq	0.0205				
Wald chi2(3)	0.92				
Prob > chi2	0.8198				

Source: Study Data (2023)

The outcome from the second step of the moderation test indicates that the interaction between firm characteristics and tax planning (firm characteristics*tax planning) had a p-value of 0.488, hence indicating non significance. A negative coefficient of -0.003 was further recorded implying detrimental joint effect of firm characteristics and tax planning on financial performance of commercial and service firms listed at the Nairobi Securities Exchange, Kenya.

4.5 Hypotheses Testing

The hypotheses testing was carried out in line with the specific objectives and the formulated null hypotheses of the study. The threshold applied was 0.1 significance level.

H₀₁: Liquidity has no significant effect on financial performance of commercial and service firms listed at the Nairobi Securities Exchange, Kenya.

The study determined the effect of liquidity on financial performance of commercial and service firms listed at the Nairobi Securities Exchange, Kenya. The underlying null hypothesis stated that liquidity has no significant effect on financial performance of commercial and service firms listed at the Nairobi Securities Exchange, Kenya. A p-value of 0.171 and coefficient of -0.0177 were obtained. Consequently, the study failed to reject the null hypothesis. This may imply the existence of dominant effect of other factors. In view of the inclusion of firm size and firm age in the regression model, the results suggest that liquidity may exert an indirect rather than direct effect on financial performance through other channels. The indirect pathways may be captured by firm size and age thereby leading to liquidity being insignificant in the direct effect model. Firm size is considered a more powerful predictor which may absorb higher explanatory power, leading to liquidity having minimal single effect on financial performance. The insignificant effect may suggest that liquidity alone is not a strong determinant of financial performance.

The inverse effect suggests that excessive level of liquidity may imply idle resources. Holding of large sums of cash or current assets limits firms from exploring investment activities in productive sectors. Since ROA captures the extent by which firms efficiently generate profitability, holding of idle liquid assets can lead to the dilution of returns, thereby resulting in a negative liquidity and return on assets nexus. The negative liquidity and financial performance (ROA) relationship can further be explained through opportunity cost of funds perspective. Firms with excessive liquidity levels may be conservative, hence forgoing opportunities of higher-return investments such as capital projects, innovations and expansions while being favorably disposed to maintaining safety and flexibility. The overall returns of firms can be decreased due to this conservative approach,

especially in a highly competitive market which is the case for commercial and service sector, where better performance can be achieved through aggressive investment strategies. Hence, the need for commercial and service firms to strike a balance between current assets and current liabilities as held by Wanzala and Obokoh (2024). Similar findings to that of the current study are those of Odu *et al.* (2023) who reported that liquidity had insignificant effect on financial performance of selected Sub-Saharan Africa Countries (Kenya, Nigeria, and South Africa). In a similar way, Azzah *et al.* (2025) documented that liquidity had insignificant effect on profitability in the Jakarta Islamic Index 70. Listy and Imronudin (2026) also established that liquidity had insignificant effect on profitability of the financial sector in Indonesia. Despite the corroboration of the findings of the study with previous studies, it is still at variance with the results of some empirical works. Nkasi and Mide (2025) reported that liquidity had significant effect on financial performance of listed manufacturing companies in Nigeria. Another study with a contrary outcome is that of Oladapo *et al.* (2025) who found that liquidity had significant effect on financial performance of listed food and beverage companies in Nigeria.

H₀₂: Firm age has no significant effect on financial performance of commercial and service firms listed at the Nairobi Securities Exchange, Kenya.

The study evaluated the effect of firm age on financial performance of commercial and service firms listed at the Nairobi Securities Exchange, Kenya. A p-value of 0.914 and a corresponding coefficient of 0.0003 were established which led to the rejection of the null hypothesis which stated that firm age has no significant effect on financial performance of commercial and service firms listed at the Nairobi Securities Exchange, Kenya. The insignificant firm age and financial performance relationship suggests that experience alone through years of operations does not automatically translate to superior financial performance, especially in the case where critical structural and operational attributes such as firm size and liquidity are taken into consideration. This outcome further implies a non-linear relationship between firm age and financial performance. In the early years of operations, financial performance of firms may improve while stabilizing in the middle years of operations and may subsequently decline during the later operational years as a result of inefficiency or rigidity by ignoring technological advancements. This non-linear relationship can be explained through the possible existence of maturity plateau effect. As firms with lower years of operations or existence may experience challenges relating to their growth, older firms derive benefits from years of experience through longer operational time frame. However, beyond a certain point, years of operations result in little or no incremental advantage. Since over the years, stable operations may have already been achieved by mature firms, additional operational years becomes insignificant.

The effect of firm age based on years of operations may be dominated by the inclusion of firm size in the analytical model. Economic benefits associate with years of experience may be captured by firm size, hence leading to firm age being statistically insignificant. The inverse firm age and financial performance relationship with regards to commercial and service firms can be linked to the heterogeneity inherent across firms and sectors. The relevance of years of operations varies for commercial and service sectors as newer firms may be more agile with adoption of a more innovative approach while firms with longer years of operations may be characterized by slower decision-making processes and generally higher bureaucracy. These can in turn neutralize the positive effects linked to years of operations (experience). The findings of the study regarding the insignificant effect of firm age on financial performance align with those of previous empirical studies. Ehiedu and Imoagwu (2022) documented that firm age had insignificant effect on

profitability of listed Oil & Gas firms in Nigeria. In another study, Nguyen *et al.* (2023) found that firm age had insignificant relationship with profitability of Vietnamese listed companies. Similarly, Oladapo *et al.* (2025) reported that firm age had insignificant effect on financial performance of listed food and beverage companies in Nigeria.

H03: Firm size has no significant effect on financial performance of commercial and service firms listed at the Nairobi Securities Exchange, Kenya.

The study examined the effect of firm size on financial performance of commercial and service firms listed at the Nairobi Securities Exchange, Kenya. In line with this, a null hypothesis which states that firm size has no significant effect on financial performance of commercial and service firms listed at the Nairobi Securities Exchange, Kenya was tested. The findings indicate a p-value of 0.094 which indicates significance. This implies that firm size is a significant determinant of financial performance based on return on assets. The corresponding coefficient of -0.2455 indicates negative effect. Firm size is considered critical in economies of scale of businesses. However, significant negative effect indicates that beyond a certain point, growing firm size depletes financial performance. Growth initially leads to improvements in efficiency; however, large firms can be structurally complex. Operational efficiency can be reduced by higher layers of management and bureaucratic processes which collectively result in diseconomies of scale and in turn lower returns on assets. Rigidity, lack of innovative activities and ineffective adaptability to market changes further limit firms in the utilization of assets to efficiently generate profits.

Increasing asset base expansion disproportional to profit growth decreases financial performance as a result of declining ROA, hence the negative relationship. Large firms may be risk averse, thereby adopting conservative investment strategies. The isolation of high-risk, high-return projects as a result of prioritizing market dominance may constrain profit generation in comparison with smaller firms with an agile and more flexible approach. These findings corroborate with the outcome of some previous studies. Nkasi and Mide (2025) reported that firm size has significant effect on financial performance of listed manufacturing companies in Nigeria. Oladapo *et al.* (2025) found that firm size had significant effect on financial performance of listed food and beverage companies in Nigeria. Nguyen *et al.* (2025) empirically established that company size has significant effect on business performance of Vietnamese Securities Companies. Listy and Imronudin (2026) documented that firm size has a significant effect on profitability of the financial sector in Indonesia. Contrarily, Akims, Akims and Pyoko (2023) while considering firm size as a control variable reported insignificant effect on profitability of manufacturing and allied firms listed at the NSE, Kenya. Similarly, Nguyen *et al.* (2023) reported that firm size had insignificant relationship with profitability of Vietnamese listed companies. Odu *et al.* (2023) documented that firm size had an insignificant effect on financial performance of selected Sub-Saharan African Countries (Kenya, Nigeria, and South Africa). The variations in the findings regarding firm size and financial performance nexus can be attributed to the diverse and varying contexts and methodology considered in the various studies.

H04: Tax planning has no significant moderating effect on the relationship between firm characteristics and financial performance of commercial and service firms listed at the Nairobi Securities Exchange, Kenya.

The study established the moderating effect of tax planning on the relationship between firm characteristics and financial performance of commercial and service firms listed at the Nairobi

Securities Exchange, Kenya. A null hypothesis which states that tax planning has no significant moderating effect on the relationship between firm characteristics and financial performance of commercial and service firms listed at the Nairobi Securities Exchange, Kenya was tested. The results indicate p-value of 0.488 and coefficient of -0.0027, implying insignificant moderation effect. The insignificance of the moderation effect implies that tax planning is negligible in firm characteristics and financial performance relationship. Therefore, regardless of whether firms are involved in tax planning activities or not, the collective effect of firm characteristics (based on liquidity, firm size and firm age) on financial performance largely remains the same. This can be attributed to the notion that firm level factors alter performance; however, tax planning is considered to perform an indirect or secondary role. Since tax planning is proxied by effective tax rate, it may be affected by tax incentives and accounting adjustments, hence the efficiency and effectiveness of tax liabilities reduction strategies may not be fully captured, thereby leading to a weak indirect effect.

The negative moderation effect suggests that increased effective tax rates (indicating lower level of tax planning) weakens the contribution of firm characteristics to financial performance. The insignificance may further imply the absence of unique tax planning strategies among commercial and service listed firms. In the case whereby majority of the firms engage in similar tax practices, there will be low variability in their tax planning implications, thereby leading to insignificant moderation effect. Depending on the operational scale of firms, tax laws (regulations) and enforcements may further limit the potential significant tax planning implications on firm characteristics and financial performance nexus. The findings of the study align largely with the empirical studies reviewed. Agboola *et al.* (2024) reported that effective tax rate has insignificant impact on financial performance of listed manufacturing companies in Nigeria. Similarly, Edemeka and Umo (2024) established that effective tax rate has insignificant effect on financial performance of listed consumer goods companies in Nigeria. Also, Olanisebe *et al.* (2025) documented that cash effective tax rate and effective tax rate insignificantly impact on financial performance of listed consumer goods firms in the context of Nigeria. Contrastingly, Siyanbola and Durosini (2025) reported that tax planning has significant effect on financial performance of listed food and beverages companies in Nigeria. The varying tax laws and regulations operational in the two countries, Kenya and Nigeria may explain the occurrence of divergent results.

5.1 Conclusion and Recommendations

The study examined the effect of firm characteristics (liquidity, firm age, and firm size) and the moderation effect of tax planning on financial performance of commercial and service firms listed at the Nairobi Securities Exchange, Kenya. The study concluded that liquidity exerts negligible effect on financial performance. Despite the importance attributed to liquidity in addressing short term obligations, excessive levels of current assets do not necessarily translate to higher profits as it may in some cases lead to inefficiency as a result of idle resources. The non significance imply that in the presence of firm age and size, liquidity alone is not a critical determinant of financial performance of commercial and service firms listed at the Nairobi Securities Exchange, Kenya. There should be strategic investments of idle funds into productive ventures so as to enhance return on assets while holding adequate liquidity levels to cover costs of operations.

It was established that firm age is not a significant predictor of financial performance of commercial and service firms listed at the Nairobi Securities Exchange, Kenya. This therefore

implies that the years of operation of a firm alone does not significantly lead to improved financial performance. Suggesting that beyond a certain maturity level, years of experience no longer results in improved performance. It is therefore important for firms (both new and old entrants) to embrace modern technology, innovation and creativity while being up to date with the dynamic customer and market behaviour rather than relying merely on experience, that is years of operations alone as a driver of financial performance.

Firm size registered a significant effect on financial performance, hence the conclusion of its critical importance. Larger firms tend to generate lower level of return on assets as a result of bureaucratic inefficiencies, diseconomies of scale and unproportionate profit growth in relation to expansion of assets. In view of the negative effect of firm size, large firms are recommended to put in place measures geared towards minimizing bureaucratic inefficiencies. These measures include enhancement of internal control systems and decentralization of decision-making while leveraging technology to improve operational efficiency. **Rather than focusing only on asset expansion**, growth strategies should also prioritize productivity and optimal resource utilization so as to maximize the benefits of economies of scale attributed to firm size.

The study established that tax planning plays an insignificant role in the relationship between firm characteristics and financial performance. The study concluded that tax planning strategies employed by firms do not significantly contribute to how firm characteristics translate into financial performance. Implying that tax planning does not significantly alter the composite effect of liquidity, firm age, and firm size on financial performance, hence any moderating influence is weak. Implying that the potential effect remains negligible and inconsistent across firms which may be outweighed by other stronger underlying structural and operational factors. Despite the insignificance of tax planning, firms are recommended to still adhere to tax regulations and guidelines while employing efficient tax management strategies. The tax systems should be simplified by policy makers while providing incentivization geared towards the encouragement of productive investment against just the conventional tax revenue maximization.

5.2 Suggestions for Further Studies

Given the insignificant direct effects established with regards to liquidity, firm age, and the moderation effect of tax planning, various suggestions are provided for future researches. Future studies can re-examine the effects of liquidity and firm age on financial performance of commercial and service firms listed at the NSE, Kenya focusing on whether the relationships are non-linear rather than linear. This is as the effects of liquidity and firm age on financial performance may be based on a threshold or inverted U-shaped relationships. The moderation effect model had firm characteristics as a composite variable, further studies can consider disaggregating firm characteristics so as to capture specific effects based on separate interaction of tax planning with each component. This will establish whether tax planning specifically moderates the effect of some, all or none of the predictor variables on financial performance of commercial and service firms listed at the Nairobi Securities Exchange, Kenya.

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