Firm Characteristics and Financial Performance of Commercial Banks Listed On the Nairobi Securities Exchange

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Abstract

Commercial banks be key financial service providers and based on which firm characteristics the management of each bank adopts, their financial performance has been observed to vary. The current research paper sought to interrogate the influence firm characteristics had on Nairobi Securities Exchange listed commercial banks' in Kenya financial performance. This study's main intent was to examine how firm characteristics influenced NSE listed commercial banks' financial performance. This research's specific intents was: to examine what effect the five selected firm characteristics have on Kenyan commercial banks performance, which include liquidity, leverage, solvency, asset structure, and the moderating effect of interest rate. This study was anchored on the pecking order, trade-off, and liquidity preference theories. The study adopted a causal research design that identifies the range as well as the description of the effect and cause of a correlation as well as the patterns of relationships between study variables. All the NSE-listed Kenyan commercial banks were the target populace. Statistical data of the financial statements were obtained from NSE and the CBK website. The study adopted a time scope of 7 years ranging from 2014 to 2020. Various diagnostic tests such as bivariate correlation analysis, normality test, Hausman specification test, multicollinearity test, and heteroscedasticity were carried out for the determination of the data reliability and validity. The descriptive statistical analysis acted as the tool for data analysis with the help of regression models. Results from the statistical analysis indicated a statistically significant correlation between liquidity, solvency, and asset structure, with the financial performance of Kenyan NSE listed commercial banks. Leverage on the other hand was observed to have an insignificant influence on performance. The rate of interest is also observed to have a significant influence on the correlation betwixt firm attributes and financial performance. This research suggests that central bank as a regulator of the commercial banks in Kenya to make use the results from the study to come up with regulations that are not too unfair to the banking institutions and that are based on the current business climate in the country. The Government can also use results from this study to set up stipulations that can help improve the operations of the banking sector to address the financial performance indifferences being experienced within the banking industry.

I.   Introduction

1.1.   Background of the Study

Many companies must be concerned with financial performance since it has great implications for their survival. When firms make efficient use of their resources it results in high performance in the distant future which results in the growth of the economy of the countries where the firms are located. However, with the increasing global competition, customer demands for financial services, and technological advancements, firms can't afford to retain all structures to make high returns and sufficiently meet customer demands (Allen, Myers & Brealey, 2011). The environment in which a firm operates highly influences its performance hence this compels the managers and owners of the organization to conduct a thorough analysis before any decisions are arrived at and to do so, firm characteristics have to be analyzed critically and diversification strategies well-reviewed.

Abbasi and Malik (2015) articulated the legal ownership of companies to shareholders therefore priority has to be accorded to them in terms of consultations when important decisions are being undertaken. Shareholders in a company are mostly interested in current and future earnings, dividend policies of their

investments, and the risks that are associated with their investments. According to Kaguri (2013), the financial performance subject continues to receive significantly high attention by researchers in varied fields like strategic management and business and also continues to be a basis for potential business persons across all sectors because financial performance is very implicative in terms of organizations ultimate dominance.

Internationally, banks in the past have been experiencing financial performance difficulties for instance there has been a recession period in the banking sector from 2007 up to 2015. According to World Bank (2018), brick and mortar operations of international banks as per the empirical findings across countries and that of country studies on the determinants of foreign bank entry have important implications for competition and efficiency of the local financial sectors. A report by Buchak et al. (2018) on the other hand indicated that non-banking institutions doubled their residential mortgage market share in the period between 2007 and 2015.

However, in Kenya, several firms have also been faced with a financial performance crisis which saw most listed and unlisted firms issue profit warnings by April 2020. Some of these firms are such as Bamburi cement, Kenya power, Housing Finance, Kenya Reinsurance Corporation among others, and management of these firms had warned their investors to anticipate at least a 25% fall in full-year earnings. A drop in tax receipts in form of corporation tax from Sh. 161.5 billion to Sh. 145.18 billion in December 2017 still indicates a decline in companies' financial realization in Kenya. Sentiments by Barney, Wright, and Ketchen (2001) indicated that certain firm attributes for instance visible factors, person capital, as well as firms' capital are significant for allowing companies in remaining competitive in their areas of operation.

1.1.1. Financial Performance

Fatihudin and Mochklas (2018) defined this construct as the capability for a company to manage its resources and its measures are such as solvency capital adequacy as well as profitability among others. It is the main indicator in what way efficient making use of persons as well as other materials in the realization of the firm's objectives and how efficient the management of the firm is. Financial performance measures mainly serve three purposes; they serve as major objectives of the business, they serve as a tool of financial management, and also serve as a mechanism for control and motivation within an organization (Nelly, 2019). Musah, Kong, Antwi, and Donkor (2019) cited a significantly positive correlation between growth and financial performance calculated through return on assets, and insignificantly positive relation amid company's return on equity and growth, and that the company's ROA, as well as ROE positive correlation with growth, was an indication that a significant growth would lead to increased company's rendition.

Matar and Eneizan (2018) in a study on financial performance determinants cited that revenues, liquidity, and profitability factors were positively related to returns on assets, whilst financial leverage, as well as the size of the firm variables, were antagonistically correlated to ROA. This paper will make use of return on investment (ROI) because it indicates how much the banks are earning compared to the investments they make. Measuring profitable investments allows the banks to ensure that they are putting their monies in the right places.

1.1.2. Firm Characteristics

Bannier and Hänsel (2008) defined firm characteristics as the managerial as well as demographic fickle which comprises the interior surroundings in a company. This paper's selected attributes to be examined include; financial leverage, liquidity, asset structure, solvency, and interest rate in determining the influence these firm attributes have in terms of influencing the Kenyan commercial banks' performance. These characteristics were measured using financial statements that are available on the CBK website and the various bank websites. Liquidity is a measure of the degree to which a company can easily transform its most liquid resources into cash to service its current debts.

However, absolute liquidity correspondence is an increasingly accurate measure as compared to the other ratios (Bagach, Khamrui & Bhunia, 2012). According to Liargovas & Skandalis (2008), the preparedness of a firm to respond to challenges, as well as opportunities in the environment it operates in, is dependent on liquidity which also enhances financial performance. Liquidity is normally measured through the current ratio but the researcher will measure it through high-quality liquid assets amount to total net cash flow amount. High liquidity indicates that firms don't incur huge financial costs as compared to low liquidity which implies that the firm has limited access to finances.

Leverage can be explained as a proportion of total debts to total capital in a company that is used to indicate the amplitude by which loans finance total assets (Hovakimian, 2004). When a firm's leverage increases it indicates that, the dependency of the firm on external debt financing increases, and the firm receiving a greater score from its debt providers which translates to high interest rates. According to Ben and Boulila (2014), debt is always associated with conditions that may limit the extent to which a firm engages in business opportunities as they occur which therefore implies difficulties in expansion by the business before debt settlement because financiers might restrict the firms' operations. Equity and agency costs of debt trade-off

(Jensen & Meckling, 1976), likewise disciplining debt effects (Grossman & Hart, 1983), as well as limited liability debt effects (Brander & Lewis, 1989) cumulatively stipulated leverage's positive to performance.

Solvency indicates availability as well as stability of cash flow in a firm that enables it to offset its debts. Solvency in this study will be measured using the debt to asset ratio. Firms with high solvency ratio indicate that they have a lesser probability to default on their obligations. Solvency measures a company's capability to settle its debts as and when they fall due and it's a tool that is used mostly by lending firms (Adam, 2019). Firms with high solvency ratio indicate that they have a lesser probability to default on their obligations. A firm's solvency should be compared with its competitors in the same industry since solvency ratios vary from industry to industry.

Asset structure is the general composition of the various assets that a firm owns. Sentiments by Campello (2006) assert that when tangible assets are placed anywhere outside the organization then it's observed that their value tends to fall drastically especially when they are pledged as collateral in the process of acquiring external financing by firms from lenders. Sentiments by Campello (2006) assert that when tangible assets are placed anywhere outside the organization then it's observed that their value tends to fall drastically especially when they are pledged as collateral in the process of acquiring external financing by firms from lenders. Corb (2012) defined the rate of interest to be a tool of the economy that regulatory bodies such as the CBK use in monitoring inflation as well as promoting the economic growth of the country. Giovanni and Shambaugh (2008) noted that when central banks increase the rates of interest then it's inevitable for all other financial institutions to escalate their lending rates too to maximize profits.

1.1.3. NSE Listed Commercial Banks in Kenya

These financial institutions are financial entities that receive deposits, offer checking account services, offer basic financial products such as certificates of deposit (CDs), make various loans, and offer savings accounts to individuals and small businesses (Julia, 2019). The governance of banks in Kenya is based on the CBK Act as well as judicious regulations that the central bank of Kenya issues occasionally (Banking Act, 2018). The CBK is under the Finance ministry and it is charged with the responsibility of formulating financial guidelines (Gladys, 2019). 42 licensed commercial banks are operating in Kenya as per the directory of Kenyan financial institutions (2017). The current paper purposes to focus on all the 12 NSE listed commercial banks which have been operational up to 2018.

Many associates have vested intrigues on firms performance and they include; creditors who are keen to have their dues for supplied resources paid as agreed, employees who are keen on the stability of the firm, shareholders who expect returns for their investments, and the government which to see firms make profits so that they can diversify and create employment opportunities and pay taxes that are used to finance its operations (Ocloo, et al., 2014).

1.2. Statement of the Problem

Firm characteristics play a key role on financial performance influence. These attributes dictate what financing mode the management of firms decides to settle on. According to Mwadime (2010), Kenyan-based commercial banks have been diversifying by opening branches in Uganda, Rwanda, Tanzania, and Sudan. This diversification is more or less attributed to growth which can be attributed to profitability. Thorough scrutiny of studies on the topical area depicted that there are mixed results of the influence these characteristics have on companies' performance in various economies all over the globe. Some of these studies are such as that of Ajibolade and Oyewo (2017) who examined the influence of organizational structure, firm size, systemic importance, and firm age firm characteristics on performance and results from this study indicated an insignificant variance in firm performance from the firm characteristics examined amongst the Nigerian Banks. This study's results however cannot be applied in the Kenyan perspective since the firm attributes examined as well as the economic environment differs from the Kenyan one hence the reason for conducting the current study. Hillison, Marlett, and Pacini (2008) in their study on the correlation of firm attributes and USA insurance industry financial performance noted that financial leverage had an inverse relationship to all measures of performance while the size of the board was positively related to the return on revenue. The findings in this study cannot be applied in the banking sector and the economy of the US also varies largely from that of Kenya hence the relevance of the current study.

A study by Yameen and Pervez (2016) cited that solvency was negatively related to financial performance where they studied the effects in steel India limited. Ezechukwu and Amahalu (2017) also cited a positive statistically significant relation amid firm size with Nigerian banks performance. These variations in findings could be associated with the variance of the various sectors that the researchers had focused on, economic and business environments that the firms operate on, and the research methodologies adopted by the various researchers among many other reasons.

In Kenya, similar studies were undertaken by various scholars. Most of these studies are focused on all firms that are listed in Nairobi's securities exchange or on specific firms. Too and Simiyu (2018) studied what

effects companies' attributes had on general insurance firms in Kenya's performance. This researcher outlined that the size of the firm had an inverse relation with performance while firm age and capital structure positively and significantly influenced performance. The current study will factor liquidity, leverage, solvency, asset quality, and interest rate as the firm attributes influencing NSE listed commercial banks' financial performance.

Most of the studies reviewed above have used firm size, age, financial leverage, and asset quality as the factors influencing financial performance. Therefore, this paper intended to improve on existing literature on the topical area and also bridging the literature gap that exists by factoring in the following unique firm attributes which include liquidity, financial leverage, solvency, asset structure, and the moderating effect of interest rate as the unique firm attributes influencing NSE listed Kenyan commercial banks financial performance measured by return on investments (ROI). This paper aimed at answering this research quiz; what are the reverberations of a firm's characteristics on NSE listed Kenyan commercial banks' financial performance.

1.3. Research Objectives.
1.3.1. General Objective
The general objective of this study was to examine how firm characteristics influenced the Kenyan NSE listed commercial banks' financial performance.

1.3.2. Specific Objectives
i.   To investigate what influence liquidity has on the Kenyan NSE listed commercial banks' financial performance.
ii.   To assess what influence financial leverage has on the Kenyan NSE listed commercial banks' financial performance.
iii.   To investigate what influence a bank's solvency has on the Kenyan NSE listed commercial banks' financial performance.
iv.   To examine what influence a bank's asset structure has on NSE listed Kenyan commercial banks' performance.
v.   To examine the moderating ramifications interest rate has on the correlation betwixt firm characteristics and the Kenyan NSE listed commercial banks financial performance.

2.1 Empirical Review
2.1.1 Liquidity and Financial Performance
Khalid, Hossain, and Rashed (2019) examined liquidity risk effects on banking performance. This study made use of data of listed commercial banks obtained from the Dhaka stock market in Bangladesh for the period between 2010 and 2017. Results from this study indicated an insignificant non-influence on ROA, ROE as well as the bank's financial performance. However, for these results to be applicable in a developing country like Kenya, the study has to be carried out on Kenyan banks and establish the correlation between liquidity and financial performance.

A similar study by Ochingo, & Muturi (2018) studied what influence firm attributes have on Kenyan SACCO's performance utilized data for the period between 2013 and 2015. This research adopted descriptive statistics to ascertain the nature of the association firm characteristics has with financial performance in Kenyan Saccos. Findings from the paper revealed a significantly positive relationship between asset quality, capital adequacy, operational efficiency and liquidity, and the financial performance of Kenyan cooperative SACCO's. However, this researcher did not factor solvency, interest rate, and financial leverage as crucial firm attributes that influence financial performance which this paper intends to introduce and apply on NSE listed commercial banks in Kenya.

Demirgüneş (2016) also examined the influence liquidity had on the Turkish retail industry's financial performance. This research was conducted for some time from 1998 to 2015. This study made use of unit root test, co-integration test by making use of data analysis method which was ordinary least square. The findings of this study indicated a strongly significant influence of liquidity on the Turkish retail industry's financial performance. The current study will use descriptive statistics and a causal research design in establishing the correlation between the study parameters.

2.1.2 Financial Leverage and Financial Performance
Kalash (2019) did a study on firm leverage, agency costs, and firm performance in Turkey where the OLS method was adopted in analyzing the statistical data for the period 2008-2017 of 52 firms. Results of this paper indicated a negative effect of leverage on firm profitability. The current study will adopt a causal research design that focuses on analyzing a particular case to describe trends of the relationship amongst the study variables addressing the methodological gap identified in this study.

Abubakar (2018) examined what effects financial leverage had on Nigerian Conglomerates quoted firms' performance. This research was carried out for the period between 2005 and 2016 and adopted the ex-post

factor together with longitudinal research designs. The researcher established a significantly positive association between levels of indebtedness with financial performance. The methodological gaps in this study which are ex-post factors together with longitudinal research designs will be addressed in the current study that will adopt a causal descriptive research design that establishes correlations amid fickle in the Kenyan banking sector.

A similar study was done by Rosemary (2017) in determining the effects selected firm attributes had on NSE listed firms' financial performance. This researcher was carried out the period between 2011 and 2015 was used for the statistical analysis. Results from this paper indicated a significantly weak positive correlation of leverage on performance, however, these results cannot be applied in the banking industry since it operates in a completely autonomous environment from other sectors hence the reason for studying banks independently in this study.

2.1.3 Solvency and Financial Performance

Dabo, Andow, and James (2018) examined what effects solvency risk had on Nigerian listed insurance firms' performance. This research was carried out on 25 insurance companies. This researcher used simple regression analysis in the study in establishing the association among the study variables. Findings from this paper reflected a positively significant correlation between solvency risks with performance. These effects of solvency on performance in this study were examined on the insurance sector hence the reason for examining the same influence on Kenyan commercial banks.

Kyule (2015) investigated what effects liquidity and solvency firm characteristics had on NSE listed firms' financial performance. Descriptive research was adopted by the researcher and data of the period between 2009 and 2013 was used which was obtained from annual reports. Results from this study show that solvency negatively affected the ROA of the NSE listed firms. The study also indicated that liquidity impacted ROA positively while financial leverage impacted ROA negatively though the effects were not statistically significant. However, these results cannot be applied in the banking industry since it operates in a completely autonomous environment from other sectors hence the reason for studying NSE listed commercial banks independently in this study.

A similar study was carried out by Bhunia, Mukhuti, and Roy (2011) on the analysis of financial performance for the Indian pharmaceuticals. Finding from this study indicated a strong liquidity position selected firms and therefore this implying the capability of the firms to settle their long-term debts when they fall due and these companies' funding was mostly from external sources. Nevertheless, the pharmaceutical varies vastly from the banking industry, therefore for these results to be applicable in the Kenyan banking industry hence the reason for examining NSE listed commercial banks.

2.1.4 Asset Structure and Financial Performance

Omondi (2018) investigated the influence asset structure has on NSE listed firms' performance. This research targeted 17 listed firms from the commercial and service sector for the period between 2011 and 2017. Findings from this study depicted a significantly strong relationship amid asset structure with NSE listed firms performance. However, these results cannot be applied in the banking industry since it operates in a completely autonomous environment from other sectors hence the reason for studying NSE listed commercial banks independently in this study.

Mwaniki and Omagwa (2017) studied the effects of asset structure on NSE listed services and commercial sector firms' performance. The performance of these quoted firms was determined via ROA, earnings per shares, ROE, current ratio as well as the profit margin for the period between 2010 and 2014. The findings from this paper depicted a statistically positive significant correlation between asset structure and performance. These results however cannot be applied in the banking industry since it operates in a completely autonomous environment from other sectors hence the reason for studying NSE listed commercial banks independently in this study.

Mawih (2014) examined the influence assets structure firm characteristic had on the financial performance of Oman Sultanate. This research was carried out for a duration of 5 years from 2008 to 2012 by measuring performance through ROA and ROE. This study made use of content analysis for annual reports to establish the correlations amongst the variables under study. Findings from this paper depicted an insignificant impact of asset structure on profitability and that only fixed assets affected the returns on equity unlike on the return on assets. However, for the correlation between firm attributes and the NSE listed financial performance to be established, content analysis cannot be applied and therefore the current study will address the methodological gap in this study by adopting a descriptive causal research design.

2.1.5 Interest Rate and Financial Performance

Kimita (2016) examined the influence variations in interest rate had on all Kenyan commercial banks' financial performance for the period between 2006 and 2015. Descriptive statistical results from this research revealed an insignificant positive correlation of GDP growth and variation in interest rate to Kenyan commercial

banks' financial performance. This study however did not capture the post capping period in Kenya to determine the influence the interest rate variation has on banks' financial performance which the current study intends to capture.

A similar study was conducted by Ngure (2014) who examined the influence interest rate had on Kenyan commercial banks' financial performance for the period between 2009 and 2013. Statistical analysis inference from the study indicated significantly positive effects of interest rate on Kenyan commercial bank's performance. These findings however are a bit outdated based on the dynamic environment the banks operate in and therefore applying the results in the present banking sector may not be feasible and therefore the reason for undertaking the current study that captures the recent events in the banking industry.

Wambari and Mwangi (2017) also examined the influence interest rates had on Kenyan commercial banks' financial performance by conducting a census on all the commercial banks. Results from the study depicted a negated influence of deposit interest rate in Kenyan banks' financial performance while the lending rate was positively correlated to the Kenyan commercial banks' financial performance. However, a methodological gap was identified in this study where the researchers made use of explanatory research design which the current study will address by adopting a causal descriptive research design.

3.1 Research Methodology
Kerlinger (1978) defined this construct as a blueprint as well as a framework that specifies the relationship between the study variables as well as the procedures to be adopted in the research process. This research paper adopted a causal research design. Zikmund et al. (2013) defined causal research design as a design that focuses on analyzing a particular case to describe trends of the relationship amongst the study variables which was utilized in identifying the extent as well as nature of the influence firm characteristics had on Kenyan NSE-listed commercial banks' financial performance.

3.2 Target Population
This comprises groups of subjects in a study who have similarities in one way or another and form part of the subject of study in a survey (Orodho, 2003). This research paper targeted all the 12 NSE-listed commercial banks that were in business in Kenya and were operational during the study period where the sampling frame will be derived. The study period was carried out for the period between 2014 and 2020.

3.3 Sampling Frame
According to Johnson and Turner (2003), this construct entails the listing of all targeted populace members who are subject to sampling. This paper's sampling frame comprised of the 12 NSE listed commercial banks coupled with other 30 unlisted commercial banks that add up to 42 and that were operational up to December 2020. This research drew its sampling frame from the published financial statements from the CBK website, and financial statements published at the Nairobi Securities Exchange.

3.4 Data Analysis
This research paper adopted descriptive analysis by the use of multiple regression models. Descriptive statistical analysis sensibly simplifies large amounts of data for a researcher to make conclusions from a phenomenon. Data obtained from the intended sources were entered into SPSS software for analysis. Quantitative analysis involves the use of relative frequencies, means, median, standard deviation, and mode (Kothari, 2009). Panel data modeling was used in the research since secondary data collected was of panel type and also because panel modeling yields more robust results.

4.1 Findings and Discussions
Statistical information utilized in analysis for this section comprised of 12 NSE listed commercial banks in Kenya from 2014 to 2020. Descriptive analysis for this study was carried out using SPSS model 25 in establishing the correlations betwixt the outcome as well as the predictor parameters. Before the actual data analysis was conducted, diagnostic tests were carried out to test the suitability as well as the reliability of the data. Regression analysis was then carried out guided by the models in section 3.7 and the findings established through inferential statistics.

4.2. Descriptive Analysis
A presentation of basic outcomes from descriptive analysis of the secondary data of the study variables which presented the means, standard deviations, and the number of observations in NSE listed commercial banks in Kenya is provided. These basic findings are illustrated in Table 1.

Table 1 Summary of Variables Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
ROI	84	-3.03	25.042	3.27639	3.015563
Liquidity	84	0.714	4.433	1.32923	0.475004
Leverage	84	1.276	16.471	6.89571	2.570485
Asset Structure	84	0.023	0.693	0.11393	0.154453
Solvency	84	0.154	0.913	0.80609	0.099491
Interest Rate	84	0.07	0.115	0.09214	0.013405

Table 1 is an illustration that in the period that the study was undertaken i.e. 2014-2020 the ROI for the NSE listed commercial banks had an average figure of 3.27639 and a lowest figure being -3.03 while the highest figure was 25.042. These banks' liquidity rate mean was 1.32923 which is an indication of how easily the banks could convert their liquid assets to cash to settle their short-term debts where the lowest figure observed was 0.714 while the highest figure was 4.433. A leverage ratio mean value of 6.89571 illustrated that the commercial banks were faced with lower risk if they relied on external financing although this can't form the basis for sourcing external financing for the banks since such financing is also dependent on other underlying factors. The minimum leverage ratio value was observed to be 1.276 while the maximum value was 16.471.

Table 1 also indicates an asset structure mean of 0.11393 which can be estimated to 0.113 billion shillings on average and which deviated by 0.15 billion shillings across all the banks. The minimum asset structure value observed was 0.023 while the maximum value was 0.693. Adusei (2011) and Coleman and Biekpe (2007) studies indicated a similar asset base to the one in this study. The table also illustrates the banks' solvency ratio mean of 0.80609 which is an indication of the banks' ease with which they were able to meet their long-term obligations and the minimum value observed was 0.154 while the maximum value was 0.913. The interest rate mean as illustrated in table 1 was 0.09214 which is 9.21% implying that accessing credit facilities by the commercial banks from the central bank was easy and the minimum rate of interest observed was 0.07 while the maximum interest rate was 0.115.

4.3. Diagnostic Tests
These trials precede the analysis to ascertain if the data on the research variables is suitable in making statistical inferences.

4.3.1. Multicollinearity Test
In multicollinearity testing, a VIF value that is above 3 as per Newbert (2008) indicates that the variables have multicollinearity issues and any value below 3 indicates an absence of multicollinearity issues.

Table 2 Collinearity Statistics

Model		Collinearity Statistics	
		Tolerance	VIF
1	Leverage	0.421	2.373
	Asset Structure	0.564	1.773
	Solvency	0.609	1.643

a Dependent Variable: Liquidity

In this analysis, the multicollinearity test was carried out by replacing ROI with liquidity making it the outcome variable as illustrates in table 3, and the collinearity level was observed to be 2 and below which is an indication that there were no problems with collinearity between the independent variables. Newbert (2008) noted that for lack of multicollinearity problems to be noted, then the VIF value should be less than 10 and not less than 0.1 or 0.2.

4.3.2. Normality Test

Table 3 Normality Test

	Kolmogorov-Smirnova			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
ROI	0.191	84	0	0.648	84	0
Liquidity	0.334	84	0	0.53	84	0

Leverage	0.244	84	0	0.741	84	0
Asset Structure	0.314	84	0	0.505	84	0
Solvency	0.309	84	0	0.431	84	0

Normality test in this study was conducted through Shapiro-Wilk based on a small sample size in this study i.e. 12 commercial banks that were listed at the NSE. Sentiments by Shapiro and Wilk (1965) attest to this phenomenon by indicating that Shapiro-Wilk is appropriate for testing for normality if the sample size ranges between 7 and 2000. Table 3 indicates a significance level values of 0.00 for both the predictor as well as outcome parameters and thus the null hypothesis was rejected since the values are less than the tabulated 0.05 alpha and conclude that the statistical data utilized in this study is normally distributed.

4.4. Panel Regression Analysis
A direct effect regression was conducted in this study and the results are discussed below.
4.4.1 Direct Effect Model
This model was used in testing the influence firm characteristics had on Kenyan NSE-listed commercial banks performance and the results are discussed below.

Table 4 Influence Firm Attributes had on Bank's Performance

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	8.369	5.034		1.662	0.1
	Liquidity	3.104	1.065	0.489	2.915	0.005
	Leverage	0.005	0.123	0.004	0.041	0.968
	Asset Structure	-7.67	2.103	-0.393	-3.648	0
	Solvency	-10.394	5.018	-0.343	-2.071	0.042

a Predictor Parameter: ROI

Source: (Study Results, 2020)

Table 5 Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics R Square Change	F Change	df1	df2	Sig. F Change
1	.797a	0.635	0.616	1.868435	0.635	34.3	4	79	0

a Predictors: (Constant), Solvency, Asset Structure, Leverage, Liquidity

b Dependent Variable: ROI

Source: (Research Data, 2020)

Table 6 Analysis Of Variance

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	478.978	4	119.744	34.3	.000b
	Residual	275.793	79	3.491		
	Total	754.771	83			

a Outcome Parameter: ROI

b Independents: (Constant), Solvency, Asset Structure, Leverage, Liquidity

Source: (Study Results, 2020)

As illustrated in Table 5, liquidity, leverage, asset structure and solvency were satisfactory in elaborating the variations in NSE listed commercial banks' financial performance. An R^2 of 0.635 is an indication that the firm characteristics combined demonstrated the behavior of the bank's performance. A significance level of 0.00 as illustrated in ANOVA table 6 means statistical significance of the model utilized.

Beta values in table 4.5 indicated that asset structure and solvency were -7.67, and -10.394 respectively which implies that for every unit decrease in the asset structure and solvency there was a corresponding decline in the ROI by 7.67, and 10.394 respectively for the commercial banks. Similarly, for every unit increase in the liquidity and financial leverage ratios of the banks, there was a corresponding increase in the ROI by 3.104 and 0.005 respectively which means that the higher the ease with which the banks could convert their assets to cash to service their current debts and their long haul debts the higher the returns on the shareholders' investments.

4.4.2. Moderating Effect Model

Moderating effect of interest rate on the influence firm attributes had on NSE listed banks's financial performance was tested using Whisman and McClelland's (2015) approach which has two levels. In the initial level, the moderating parameter is introduced as an explanatory variable to ascertain if the variable is a descriptive parameter or not.

Table 7 Step One of the Moderation Test

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	6.402	5.136		1.246	0.216
	Liquidity	3.142	1.055	0.495	2.979	0.004
	Leverage	0.01	0.122	0.008	0.079	0.937
	Asset Structure	-8.002	2.093	-0.41	-3.824	0
	Solvency	-10.822	4.977	-0.357	-2.174	0.033
	Interest Rate	24.614	15.448	0.109	1.593	0.115

a Dependent Variable: ROI

Source: (Research Data, 2020)

Table 8 Synopsis of the Model

Model	R	R^2	R Square Adjusted	Standard. Error of the Estimate
1	.804a	0.646	0.623	1.850498

a Independent Variables: Interest Rate, Liquidity, Leverage, Asset Structure, Solvency

b Dependent Variable: ROI

Source: (Research Data, 2020)

Table 9 Analysis Of Variance

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	487.672	5	97.534	28.483	.000b
	Residual	267.099	78	3.424		
	Total	754.771	83			

a Outcome Parameter: ROI

b Independent Variables: Interest Rate, Liquidity, Leverage, Asset Structure, Solvency

Source: (Study Results, 2020)

Table 8 illustrates the results of R^2 to be 0.646 which illustrates that the variables had a good explanatory influence on the NSE listed commercial banks' financial performance. The results implied that firm attributes together with the rate of interest combined represented a 64.6% influence on the bank's financial performance. The same results are backed up by an F statistic of 28.483 in table 9 which implied that the model was significant for the test. The results as illustrated in table 7 depicted a significant influence of the rate of interest on banks' performance with all other variables held constant. To confirm these results, a second step arbitration analysis was conducted to establish if central bank rate was a regression parameter or it had a moderating effect on the influence firm attributes had on the NSE listed financial performance.

Table 10 Step Two of the Moderation Test

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-5.602	44.148		-0.127	0.899
	Liquidity	23.458	7.534	3.695	3.114	0.003
	Leverage	2.508	1.184	2.138	2.119	0.037
	Asset Structure	-67.701	14.427	-3.468	-4.693	0
	Solvency	-41.76	49.228	-1.378	-0.848	0.399
	Interest Rate	123.88	477.452	0.551	0.259	0.796
	Liquidity*Interest Rate	-256.863	78.912	-3.493	-3.255	0.002
	Leverage*Interest Rate	-31.788	12.697	-2.908	-2.504	0.014
	Asset Structure*Interest Rate	736.84	162.346	3.743	4.539	0
	Solvency*Interest Rate	457.844	538.261	2.186	0.851	0.398

a Outcome Parameter: ROI
Source: (Study Results, 2020)

This second step of the moderation effect test was undertaken as illustrated in table 10 whereby interest rate was interacted with all the predictor variables namely liquidity, leverage, asset structure, and solvency to ascertain whether it had an arbitrating ramification on the correlation betwixt the studied attributes and Kenyan NSE listed banks' performance. The reason for this interaction is to ascertain whether interest rate was significant in predicting the firm characteristics on banks' performance.

4.5 Hypothesis Testing
The results of the hypothesis tests in this study have been provided in this section. Hypothesis testing was at 0.05 significance level and panel regression is the criteria that were adopted in the study.
$H_{0\ 1}$ **: Liquidity has no significant effect on Kenyan NSE listed commercial banks' financial performance.**
In this study, the influence liquidity had commercial banks' performance was examined and a null hypothesis formulated which stated; liquidity has no significant effect on Kenyan NSE listed commercial banks' performance. The findings depicted that liquidity had a 0.005 P-value as illustrated in table 4. In this case, the study rejected the null hypothesis, and a conclusion that liquidity's effect on the Kenyan NSE listed commercial banks' financial performance was significant was arrived at.
These results on the influence liquidity had on financial performance agreed with past studies like that of Ochingo, & Muturi (2018) studied the influence firm attributes have on Kenyan SACCO's performance which revealed a significantly positive relationship between asset quality, capital adequacy, operational efficiency and liquidity. Demirgüneş (2016) also examined the influence liquidity had on the Turkish retail industry's financial performance findings of this study indicated a strongly significant influence of liquidity on the Turkish retail industry's financial performance
$H_{0\ 2}$ **: Financial leverage has no significant effect on Kenyan NSE-listed commercial banks' financial performance.**
In this study, the influence financial leverage had on commercial banks' performance was examined and a null hypothesis formulated which stated; financial leverage has no significant effect on Kenyan NSE listed commercial banks' performance. The findings depicted that leverage had a 0.968 P-value as illustrated in the table above. In this case, the study failed to reject the null hypothesis and a conclusion that financial leverage has no significant effect on the Kenyan NSE listed commercial banks' financial performance was arrived at.
These results on the influence financial leverage had on financial performance were similar to past studies. Murikwa (2017) studied the Relationship leverage had with the NSE-listed banks' performance and established that leverage had an insignificant relation with banks performance. Ali (2020) also examined the effects financial leverage had on the Pakistan Fertilizer as well as food sectors firms' performance and findings depicted combined leverage and financial leverage insignificant effects on the two sectors performance.
$H_{0\ 3}$ **: Solvency has no significant effect on the financial performance of Kenyan NSE listed commercial banks.**
In this study, the influence solvency had on banks' performance was examined and a null hypothesis formulated which stated; solvency has no significant effect on Kenyan NSE listed commercial banks' performance. The findings depicted that solvency had a 0.042 P-value as illustrated in the table above. In this case, the study

rejected the null hypothesis and a conclusion that solvency's ramification on Kenyan NSE listed commercial banks' financial performance is significant was arrived at.

These results on the influence solvency had on financial performance were similar to past studies. Dabo, Andow, and James (2018) examined what effects solvency risk had on Nigerian listed insurance firms' performance and findings from this paper reflected a positively significant correlation between solvency risks with performance. Bhunia, Mukhuti, and Roy (2011) also carried out an analysis of financial performance for the Indian pharmaceuticals and the finding from this study indicated a strong liquidity position selected firms and therefore this implying the capability of the firms to settle their long-term debts when they fall due and these companies' funding was mostly from external sources.

$H_{0\ 4}$: Asset structure has no significant effect on the financial performance of Kenyan NSE listed commercial banks.

In this study, the influence asset structure had on banks' performance was examined and a null hypothesis formulated which stated; asset structure has no significant effect on Kenyan NSE listed commercial banks' performance. The findings depicted that asset structure had a 0.00 P-value as illustrated in the table above. In this case, the study rejected the null hypothesis, and a conclusion that asset structure's ramification on banks' performance is significant was arrived at.

These results were similar to past studies. Omondi (2018) investigated the influence asset structure has on NSE listed firms' performance and findings from this study depicted a significantly strong relationship amid asset structure with NSE listed firms performance. Mwaniki and Omagwa (2017) studied the effects of asset structure on NSE listed services and commercial sector firms' performance and findings from this paper depicted a statistically positive significant correlation between asset structure and performance.

$H_{0\ 5}$: Central bank rate has no significant moderating ramification on the influence firm attributes have on the financial performance of Kenyan NSE listed commercial banks.

The research tested a null hypothesis formulated which stated; the rate of interest has no significant moderating effect on the influence firm attributes have on Kenyan NSE listed banks' performance. The hypothesis testing was subdivided further into four null hypotheses to examine the arbitrating ramification interest rate had on the correlation firm attributes had on NSE-listed Kenyan banks' performance.

Table 10 illustrates the results of the sub null hypothesis and the first sub null hypothesis illustrates interest rate's interaction with liquidity which depicted a 0.002 P-value (Interest rate*Liquidity). The sub-null hypothesis states that central bank rate has no significant moderating effect on the correlation liquidity had on NSE-listed Kenyan banks' performance. Therefore from the findings, this sub null hypothesis were rejected at 0.05 significance level thus conclude that central bank rate has a significant arbitrating ramification on the correlation liquidity had on Kenyan NSE listed banks' performance.

A second sub null hypothesis in Table 10 illustrates the interaction between interest rate and financial leverage which had a P-value of 0.014 (Interest rate*Financial Leverage). The sub-null hypothesis states that interest rate has no significant arbitrating ramification on the correlation leverage had on Kenyan NSE-listed banks' performance. Therefore from the findings from the study, the null hypothesis was renounced at 0.05 level of significance thus conclude that interest rate had a significant moderating effect on the correlation leverage had on the performance of Kenyan NSE listed commercial banks.

A third sub null hypothesis in Table 10 illustrates the interaction between interest rate and asset structure which had a P-value of 0.00 (Interest rate* Asset Structure). The sub-null hypothesis states that the central bank rate has no significant moderating ramification on the correlation asset structure had on Kenyan NSE-listed banks' performance. Therefore from the findings in this study, the stated null hypothesis was renounced at 0.05 level of significance thus conclude that interest rate had a significant moderating effect on the relationship asset structure had on Kenyan NSE-listed banks' performance.

A fourth sub null hypothesis in Table 10 illustrates the interaction between interest rate and solvency which had a P-value of 0.398 (Interest rate*Solvency). The sub-null hypothesis states that the central bank rate has no significant moderating ramification on the correlation solvency had on Kenyan NSE-listed banks' performance. Therefore from this result, we fail to reject the null hypothesis at a 0.05 significance level and conclude that the central bank rate had no significant moderating ramification on the correlation solvency had on Kenyan NSE-listed banks' performance.

Therefore these findings from the moderating effect test a decision can be arrived at that interest rate did moderate the relationship between the stated firms' attributes and Kenyan NSE listed banks' performance except for the solvency predictor variable.

5.1 Conclusion

Firm characteristics are crucial financial performance influencers. These attributes dictate what financing mode the management of firms decides to settle at. Therefore the conclusion for this study was informed by the findings presented in the previous chapter. From these finding in the research, it has been deduced that the firm characteristics that were being examined in the study did have a significant influence on

Kenya's NSE-listed banks' performance. This is because all the null hypotheses for the predictor variables i.e. liquidity, asset structure, and solvency was rejected at a 5% significance level which stated that; the firm characteristics had no significant effect on the financial performance of Kenyan NSE listed commercial banks. Financial leverage null hypothesis on the other hand failed to be rejected at a 0.05 significance level and it was concluded that financial leverage firm attribute had no significant influence on the financial performance of Kenyan NSE listed commercial banks.

The moderating variable i.e. interest rate was also found to have a significant effect on the relationship between the liquidity, asset structure, and leverage predictor variables and outcome variable. The interest rate was also found to be a good explanatory variable in explaining the financial performance since the performance increased when the interest rates hiked and declined with the decline in interest rates.

5.2 Recommendations
Firm characteristics form part of the macro-economic environment in which organizations operate in and thus they need to be interrogated further now and then since they do have a ramification on organizations' performance depending on the sector these organizations operate at.

5.2.1. Recommendations for Practice
Results from this study can be used by the management of the banks in Kenya as well as other organizations to identify the causes of financial difficulties that lead to some of the banks going under and others being put under receivership as the researcher has stipulated at the end of the study and also make use of the recommendations from the paper to improve on future financial decision-making. Careful examination of the firm characteristics adopted by the banks can be a great boost to financial performance since the banks can make use of sound financial decisions in terms of how much credit to acquire and how best to invest the acquired monies, how much reserves they should hold etc.

5.2.2. Recommendation for Policy
The CBK as the commercial banks' regulator can use the recommendations from this study to come up with regulations that are not too unfair to the banking institutions and that are based on the current business climate in the country. The Government can also use results from this study to set up stipulations that can help improve the operations of the banking sector to address the financial performance indifferences being experienced within the banking industry in Kenya.

6. Suggestion for Further Research
This topical area i.e. effects of frim attributes on performance cannot be over-researched. The firm attributes effects on performance have also been observed to vary based on the sector or industry a firm operates in and therefore, they need to be studied further and independently per sector if possible because as observed firms do vary largely in terms of their financial performance. Further research can be carried out on what ramifications firm attributes have on banks' performance not listed in the NSE, effects on micro-financial institutions, and effects on deposit-taking SACCOs in Kenya, and perhaps factor in the Covid-19 recession period to establish the effects these characteristics have on financial performance and establish how the pandemic affected the performance of the financial institutions in Kenya.

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