African Journal of Emerging Issues
Peer reviewed | Double blind | Interdisciplinary

African Journal of Emerging Issues (AJOEI)
Online ISSN: 2663 - 9335
Available at: https://ajoeijournals.org

FINANCE AND ACCOUNTING

MANAGERIAL CONTROLLABLE FACTORS AND PROFITABILITY OF COMMERCIAL BANKS IN KENYA

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ABSTRACT

Purpose of the Study: This study examined managerial controllable factors influencing profitability of commercial banks in Kenya.

Statement of the Problem: A review of the Central Bank of Kenya published annual reports show that the number of commercial banks making losses or marginal profits is substantial and has actually been going up in the recent past. 8 banks were loss making as at 31st December, 2019 while 17 or 42 percent of the banks in the sector had a marginal return on assets of 1 percent or less. Despite this scenario, there were banks making reasonable returns within the Kenyan banking sector.

Methodology: The population was all the commercial banks operating in Kenya as at December 31, 2019. Secondary data for the period 2010 to 2019 was used in the analysis. This study used descriptive research design and employed balanced panel data. Independent variables were operational efficiency, capital adequacy, branch network, bank size and liquidity while the dependent variable was profitability. The moderating variable was asset quality.

Result: The findings revealed that branch networks, bank size and operational efficiency statistically significantly affected profitability. Operational efficiency was the major endogenous factor affecting bank profitability. Capital adequacy and liquidity had a statistically insignificant effect on profitability. The coefficient of determination R2 was 0.4847 indicating that branch networks, capital adequacy, bank size, operational efficiency and liquidity jointly explained 48.47% of the variation in profitability of commercial banks in Kenya. After moderation, R2 increased significantly to 51.62% which meant that the moderating effect of asset quality was statistically significant.

Conclusion: The study concluded that managerial controllable factors statistically significantly affected bank profitability.

Recommendation: Based on the findings it was recommended that bank managers in Kenya should identify and invest in managerial controllable factors for better profitability.

Keywords: *Managerial, Controllable factors, Profitability, Commercial, Bank, branch network capital adequacy, bank size, and operational efficiency.*

1.1 BACKGROUND OF THE PROBLEM

The banking sector is one of the most regulated in Kenya and worldwide. Banking regulation originates from the concerns that banks are custodians of the depositors and investors. Commercial banks also play an important role in the economy and their stability is relevant and critical for the financial system. Instability in the banking system can have material ripple effects into other sectors of the economy. Banks are important in the economy due to their intermediary role which makes them contribute to health and stability of the economy (Imad, Qais & Thair, 2011).

The shareholders contribute and inject equity capital to the commercial banks and expect a reasonable return on their investment. However, most of the trading and investment by the banks is done using the deposits from their customers. In case of bank crisis and failure, the depositors are the most negatively affected. Many of these depositors end up losing their live time savings. Given the impact and consequences of any bank failure to the general public, the regulators and governments end up using moral suasion, informal means and written laws and regulations to manage and control the banking sector. Government initiated bail outs of insolvent banks, forced bank mergers and even nationalization of banks is not uncommon in many countries (Heirmer, 2006). Governments and central banks closely monitor the banks and provide liquidity support and bailouts from time to time to avert any major banking crisis.

The central banks and states have put standards or regulations on the minimum requirements relating to liquidity, capital requirements, cash ratios, foreign exchange exposure and credit risk. They have also put restrictions on bank mergers, branch expansions, shareholdings and top management and directorships. Despite the stringent restrictive laws and prudential regulations and guidelines issued by the central banks and states, commercial banks are still expected to make and maintain profitability. This is critical for two main reasons: Firstly, banking is based on customer confidence. Potential clients will not choose a bank that cannot guarantee security of their deposits and investments, for example in the banking business depositors may treat the insecurity as a possible loss of their deposits and investments. The banking sector must gain and maintain public confidence because it is the most important factor that ensures stability of the banking system as a whole (Jureviciene & Skvarciany, 2013). Depositors and other investors are quick to react to a bank's poor performance and this can easily lead to a run on the bank and therefore collapse and closure. Secondly, losses by a commercial bank reduce its liquidity and capital level. Nimalathasan (2008) was of the view that the ability of a bank to remain a going concern to the foreseeable future can be predicted by examining its past and current earnings or profitability. Once the liquidity and capital levels fall below the minimum statutory requirements, the Central Bank is normally quick to put in sanctions on the bank that may include statutory management and closure. Profitability is therefore critical for commercial banks and is one of the major research areas in finance and economics.

To maintain stability and public confidence, banks should be profitable and solvent. Other than the unique financial intermediation function, the profitability and solvency of banks has a significant impact on a country's economic growth and development. Good financial performance of a bank

rewards the shareholders for their investment and stimulates additional investment which will bring further economic growth. On the other hand, poor performance of banks may lead to their failure and systematic financial crisis which will have negative consequences on economic growth (Nuhiu, Hoti & Bektash, 2017). Given the extreme importance of profitability in the banking sector, it is important to understand the factors that affect profitability of commercial banks. Unprofitable banks will collapse leading to loss of investment and savings of the shareholders and depositors. In such a perspective, banks have become more aggressive in controlling and analyzing their costs and revenues, as well as measuring the risks taken to produce acceptable returns (Girardone, Molyneux, & Gardener, 2004). In a competitive environment, banks have to efficiently match maturity levels of their assets and liabilities while managing their risk level, liquidity, earnings and profitability, credit exposure and their deposit levels to mitigate against losses and thus improve profitability (Zopounidis, 1999).

Scholars continue to do studies on what factors determine the profitability of commercial banks. The findings from these studies are diverse and varied. According to Kosmidou, Tanna and Pasiouras (2008), Flamini, McDonald and Schumacher (2009) and Vong and Chan (2009), a bank's capital adequacy level has a positive impact on a bank's profits. A bank that is adequately capitalized enjoys public confidence in the market place and lower bankruptcy costs and hence good profitability. However, in a study done by Athanasoglou, Delis and Staitouras (2006), they found that bank capital was negatively related to the profitability of the banks in South Eastern European regions, but the macroeconomic variables like gross domestic product and inflation had a positive impact on profitability.

In their research of Middle East and North Africa region countries commercial banks for the period 1989-2005 Naceur and Omran (2008) found that bank specific characteristics such as credit risk and bank capital had positive and significant impact on bank profitability but there was no evidence of a significant impact of macroeconomic variables on banks' profitability. However, Hefferman and Fu (2008) in their research on China's banking system concluded that macroeconomic variables such as inflation had a positive impact on the profitability of commercial banks. They further concluded that though the type of bank was influential, bank size was not a significant factor on a bank's profitability. A study by Samad (2015) examined the profitability determinants of commercial banks in Bangladesh using the regression model with panel data for the period 2009-2011. From the study, bank specific or internal factors were important in the determination of bank profitability. Bank liquidity, credit risk, capital level and bank efficiency were significant factors for determining profitability in the banking industry. Bank sizes and macroeconomic variables showed no impact on profitability. In his study Onuonga (2014) investigated the effects of internal determinants on the profitability of commercial banks in Kenya. The study was limited in scope to Kenya`s top six commercial banks over the period 2008 to 2013. The findings revealed that bank size, capital strength, bank operation expenses, ownership, and the ratio of loans to assets were the main determinants of the profitability of the six largest commercial banks.

In his study targeting banks operating in Pakistan for the period 2009 to 2012, Dawood (2014) evaluated the profitability of 23 commercial banks. The research examined the internal factors that could affect the performance of the commercial banks in Pakistan. The findings of the study were that cost efficiency, liquidity and capital adequacy were the variables within the control of management that determined the profitability of commercial banks operating in Pakistan. Deposits levels and size of the bank did not have a significant effect on profitability. The findings on bank size did not agree with those done by Onuonga (2014) on the profitability of commercial banks in

Kenya. In a study on the determinants of financial performance of commercial banks in Kenya, Ongore and Kusa (2013) concluded that capital adequacy had a strong and positive influence on bank performance. Management efficiency also had a strongly and positive influence on profitability of the banks. The asset quality had a strong but negative influence on the performance of the banks. However, liquidity did not significantly influence the financial performance of commercial banks in Kenya. The findings on liquidity were in contradiction with those of Dawood (2014) in Pakistan.

The commercial banks have in the recent years impressed technology and automation and introduced things like ATMs, internet and agency banking which has apparently translated to operational efficiency in the banking sector. Banks can however, only be motivated to be efficient if when they spend resources on efficiency improvement, it also improves their profitability leading to higher returns to the shareholders. Improving efficiency has long been a challenge for the financial services industry, but cost management is not only bout reducing expenses but also about generating more revenue per unit of cost (Arafat, Warokka & Suherman, 2013). The contribution of technology and increased efficiency to the profitability of commercial banks is still not clear. This study incorporated operational efficiency as one of the variables and examined its effect on the profitability of the banks.

According to Ongore and Kusa (2013), operational efficiency significantly and positively influences financial performance in the Kenyan commercial banks. In a study done by Lotto (2019) on the determinants of operational efficiency of the commercial banks in Tanzania for the years 2000-2017, it was established that a bank's profitability and operating efficiency were directly related. From the findings of the study, it was suggested that banks can increase their profitability by investing more on financial innovations and branch networks. The findings of a study done by Tregenna (2009) who studied the determinants of bank profitability in the Unites States, did show that bank efficiency does not have a strong effect on bank profitability.

The profitability of commercial banks is largely affected by managerial factors or decisions. Athanasoglou et al. (2006), for example, found that, with the exception of liquidity, all managerial controllable determinants significantly affected bank profitability. Eljelly (2013) in his study explored the determinants of profitability of banks in Sudan. The study concluded that it was only the internal managerial controllable factors that have a significant impact on banks' profitability. The operational cost, liquidity and size of the bank were found to have positive and significant effects on profitability. In regard to the external macroeconomic factors, the study showed that the factors were redundant with no significant effect on bank profitability. According to Athanasoglou, Brissimis and Delis, (2008), operational efficiency might be achieved when banks use the right combination of inputs while at the same time limiting cost of operation to the desired level. The management of the banks should therefore have good insight into their inputs and elements that determine their profitability.

The Kenyan banking sector had 41 commercial banks, 1 mortgage finance and 9 representative offices of foreign banks licensed to operate in Kenya as at December 31, 2019. Of the 41 banking institutions, three were either under statutory management or receivership. Although the overall profitability of commercial banks could be considered good, the Central Bank report for 2018 indicated that out of the 39 commercial banks operating and where not in either statutory management or receivership, 8 of them made losses while 17 of them had a marginal return on assets of 1 percent or less. In the year 2019, 8 banks were loss making while 17 of the commercial banks made a marginal return on assets of 1 percent or less. The statistics were more less the same as in

the year 2016 when 10 banks made losses while 19 of them had a return on assets of one percent or less. Review of the Central Bank report for the year 2011 showed that only 2 banks made losses and only 6 had a return on assets of less than 1%. The number of banks making losses and reduced return on assets appear to have increased over the past few years as per the published annual reports of the Central Bank of Kenya.

1.2 STATEMENT OF THE PROBLEM

A review of the Central Bank of Kenya published annual reports show that the number of commercial banks making losses or marginal profits is substantial and has actually been going up in the recent past. Eight (8) banks were loss making as at 31st December, 2019 while 17 or 42 percent of the banks in the sector had a marginal return on assets of 1 percent or less. Despite this scenario, there were banks making reasonable returns within the Kenyan banking sector. Given the fact that all banks in Kenya face the same external or macroeconomic environment, then the poor performance of some of the banks and the good performance of others can be expected to be largely attributed to managerial controllable factors. Managerial controllable factors explain a large proportion of banks' profitability (Kosmidou et al., 2008). This research sort to identify managerial controllable determinants of profitability of commercial banks so as to help the poorly performing banks in improving their profitability. It is critical for commercial bank managers to understand what parameters should be kept at bear minimum so as to comply with the regulatory and prudential guidelines and those that must be enhanced to increase the profitability of their institutions. The proposition is that managers who understand their banks' profitability drivers will outperform those who do not.

In Kenya, not so many studies have been done on bank profitability and it is still an area of great interest. Even in countries where numerous studies have been done the debates and studies about bank profitability will continue to be a live given that the determinants of bank performance are dynamic from time to time and change with the nature of the bank's operation and from one country to another (Flamini et al., 2009). A good example of dynamics in the banking sector is the proliferation of automated teller machines and the advent of agency and on-line banking and other technical innovations. One needs a current study to understand how automated teller machines, on-line banking, mobile banking and other banking innovations have impacted on operational efficiency, the branch networks and the profitability of the commercial banks in Kenya. This study should in a unique way enhance that understanding by carrying out a current study on the profitability of commercial banks in Kenya.

1.3 RESEARCH OBJECTIVES

i. To find out how branch network affects profitability of commercial banks in Kenya
ii. To establish the relationship between the level of capital adequacy and the profitability of commercial banks in Kenya
iii. To find out how bank size affects profitability of commercial banks in Kenya
iv. To Examine if operational efficiency is a significant determinant of the profitability of commercial banks in Kenya
v. To investigate how the level of liquidity affects the profitability of commercial banks in Kenya
vi. To determine the moderating effect of asset quality on the relationship between management controllable factors and profitability.

1.4 RESEARCH HYPOTHESES

The following were the six hypotheses tested:

H_{01}: There is no statistically significant relationship between branch network and profitability.

H_{02}: There is no statistically significant relationship between capital adequacy and profitability.

H_{03}: There is no statistically significant relationship between bank size and profitability.

H_{04}: There is no statistically significant relationship between operational efficiency and profitability.

H_{05}: There is no statistically significant relationship between liquidity and profitability.

H_{06}: Asset quality does not statistically significantly moderate the relationship between management controllable factors and profitability.

1.8 Conceptual Framework

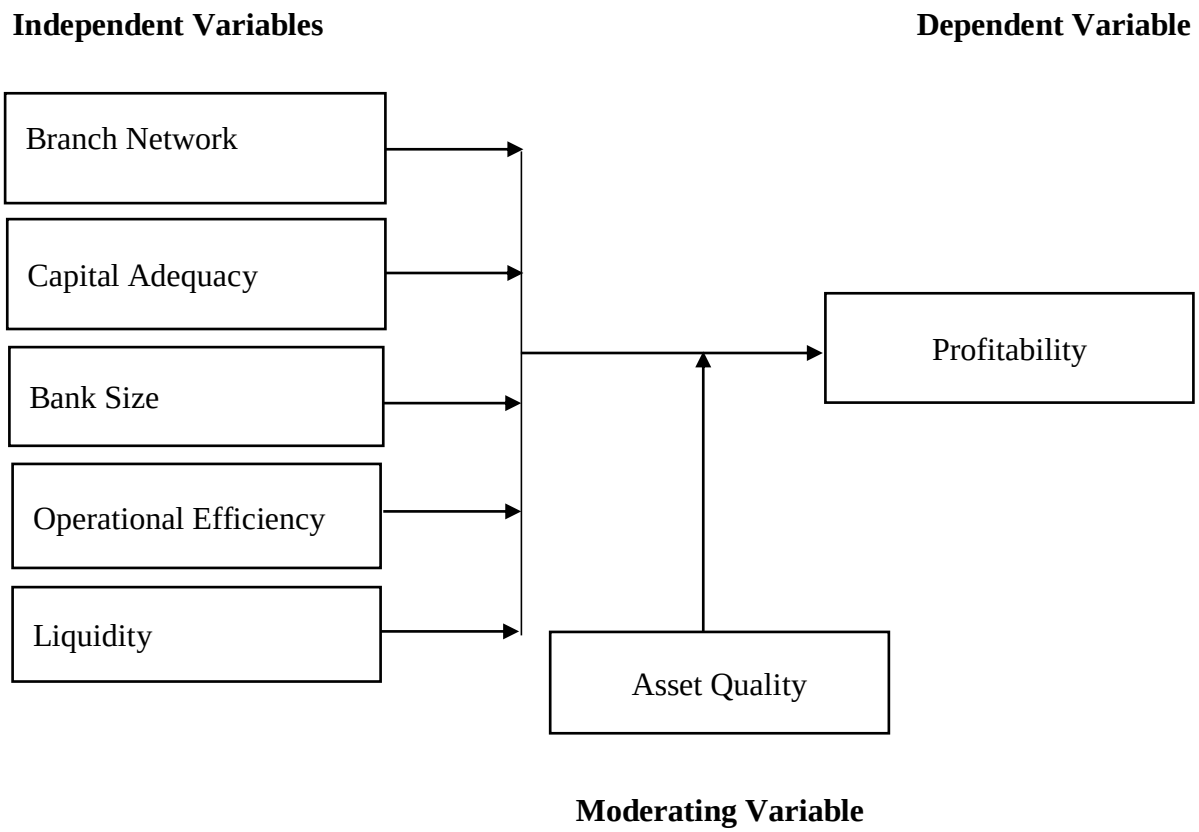

Figure 1: Conceptual Framework

Source: Author (2020)

2.1 Review of Theories

2.1.1 The Efficiency Theory

This theory was formed by Demsetz (1973) as an alternative to the market power theory. The efficient structure hypothesis or theory predicts that in a case where there is a very high level of competition in the market place, the most efficient firms will prevail and further grow their business to become larger, gain more market share and increase their profits. The more these firms grow and get greater market share the more the market gets concentration. The market is ultimately expected to become more and more efficient as it becomes more and more concentrated. Smirlok (1985), in support of the efficiency hypothesis considered market share as an indicator of efficiency. When there is a positive and significant correlation between market share and profitability then efficiency hypothesis is signaled and presumed and introduction of any anti-concentration measures will result in a lot of distortions in the economy.

As proposed by Berger (1995), there are two measures that can be used to gauge efficiency. The two measures are classified as X-efficiency and Scale efficiency. X-efficiency exist when the output of one firm costs less to produce than that of the competing firm. This can be partly attributed to better and advanced technology than that of the competitor. Because of these advantages, X-efficient firm will control a bigger share market (Mensi & Zouari, 2010; Garza-Garcia, 2012). Scale-Efficiency comes from the belief that a firm can produce at a lower cost per unit compared to its competitor, consequently make higher profits. Those in support of the scale efficiency argue that profits are simply made by differences in cost efficiency. According to Berger (1995), even if all firms had good management and technology, some firms will still produce at more efficient scales than others and hence, have lower unit costs and higher unit profits.

The implication of this theory then is that when there is better management and hence higher operational efficiency within a firm, it results into higher concentration hence higher profits. When this hypothesis is extended to the commercial banks, then it implies that increased efficiency in the banking sector leads to higher profits resulting from low operational costs. The more efficient banks will have a higher share of the market and profitability.

2.1.2 Quiet-life Hypothesis

According to "Quiet-life" hypothesis which was formed by Hicks (1935), market power leads to lower cost efficiency and therefore high operating costs, since it enables managers to enjoy some level of monopoly rents in the form of relaxed operational cost management. Hicks (1935) suggests that producers and their agents with high level of market power are likely to use their market power to behave inefficiently. The quiet-life hypothesis purports that in a situation where there exists concentrated market, organizations do not operate at optimal cost level because of limited managerial effort, absence of profit-maximizing behavior and unnecessary and wasteful expenditures to enable the firm get and retain the monopoly power and/or to ensure the protection of ineffective and inefficient management (Berger & Hannan, 1998). In their study, Berger and Hannan (1998) tested the quiet life hypothesis by using United States data from the 1980s. From the findings of the study, there was clear evidence that showed that those banks in more concentrated markets exhibited low cost efficiency compared to other banks. A study done in Ghana by Alhassan and Ohene-Asare (2016) found that competition and hence limited market power improves cost efficiency hence supporting the quiet life hypothesis.

An alternative explanation or criticism to the quiet life hypothesis calls for the rejection of this hypothesis, especially in relation to the banking industry. Banks with market power are able to incur lower costs in screening and monitoring their borrowers. Market power also enables the banks to benefit from higher and increased profits, which motives the banks to behave prudently, resulting in the selection of less risky investment opportunities which further results in lower monitoring costs. Lastly, banks with high market power experience less customer demands and pressure in providing quality banking services, which leads to reduction in their operating costs.

2.1.3 Relative Market Power Hypothesis

The relative market power hypothesis is attributed to the works of Shepherd (1986); Berger (1995). According to this hypothesis a high market share is associated with relatively high market power. Hence, the key variable is market share when investigating the relative market power hypothesis. Relative Market Power Hypothesis emphasize market share as the main determinant of profitability. According to Berger (1995), firms that have large market shares and well differentiated and unique products and services exercise market power in pricing their products and services and therefore earn abnormal or above market profit. Unlike the Structure-Conduct-Performance hypothesis, the Relative Market Power hypothesis states that a firm's financial performance or profitability is influenced by the market share of the firm.

The hypothesis assumes that the large firms with several differentiated products and services are in a good position to influence their and market prices resulting in an increase their profits. The firms can therefore exercise market power and eventually earn above normal profits. Smaller firms do not have the ability to influence prices and increase profits. The relative-market-power hypothesis therefore asserts that those firms with large market shares and well-differentiated products and services have the ability not just to influence but to also set prices for their products and services and therefore make supernormal profits. In this situation, market-wide price setting does not exist but the price setting is done by the large dominant firms or banks in the case of the banking sector. Firms with low market shares operate as if under perfect competition and are simply price takers in the industry.

2.1.4 Stakeholder Theory

This theory was invented by Freeman (1984). This theory states that the firm represents the stakeholder needs hence any decisions or action that is taken by the firm should have an aim of representing and taking care of the needs of all the stakeholders and not just a section of them. Stakeholders include customers, the government, management, and the community and company employees. Friedman and Miles (2002) in their findings stated that high returns recorded by firms are able to cater for various needs of all the stakeholders.

Applied to the banking sector, the main idea behind spreading of branch networks, for example, is to ensure constant growth and expansion, so as to satisfy the needs of all stakeholders even as profits are increased. Since the stakeholder needs are different and they evolve over time, a spread in branch networks opens up more opportunities for customers to easily and conveniently access a variety of banking services and this improves customer satisfaction while at the same time shareholders and managers are expected to gain from higher profitability through higher salaries and dividends.

2.1.5 Stochastic Frontier Analysis Theory

Stochastic Frontier Analysis Theory was developed by Dennis et al. (1977). This theory states that the performance of a firm is mainly judged by measuring economic efficiency. According to

Kalirajan and Shand (1999), efficiency is made up of two components: technical efficiency and allocative efficiency. Technical efficiency is the attainment of the highest potential output from given amounts of factor inputs and technology. Allocative efficiency measures the firm's success in choosing the optimal input proportions, given their respective prices.

There are two main ways by which to measure the performance of commercial banks. The first one is referred to as the classical approach that is based on profit-cost analysis. This approach is represented by the financial performance ratios such as return on equity, return on assets, capital assets ratio, growth rate of total revenue and expenses/income ratio. The second approach is the frontier efficiency approach. Frontier efficiency measures deviations in performance from those of the best performing or the most efficient on the efficient frontier. The Frontier efficiency method measures the performance of a bank in comparison to the predicted performance of the best banks facing the same market conditions in the sector. It shows how well the managers manage costs and how efficiently they use the bank resources at their disposal compared to the best performing banks.

2.2 Empirical Review

Commercial banks can operate as a single unit bank from one location or open several bank branches to serve their customers. Since banks need to be profitable to survive, it is important to establish the relationship between branch network spread and financial performance of commercial banks in Kenya. If the relationship is significantly positive, then banks will be motivated to open more branches and take bank services closer to the customers.

The issue of capital has been widely studied in theoretical and empirical literature. The question asked many times is whether capital structure affects profitability of commercial banks and if those banks that have high capital levels make higher profits or have a better return on assets or owners' equity compared to those with lower capital levels. In relation to bank size, there are arguments that large banks have a higher return on assets due to economies of scale. One concern is that big banks make abnormal profits by using their market power to charge higher lending rates and other banks charges as they become larger, more efficient, and unchallenged. In contrast, there are those who argue that small banks are easy to manage and do not suffer from diseconomies of scale and are therefore able to have a higher return on their assets and capital employed.

Empirical studies have also looked at efficiency and liquidity. The competition in the banking sector exerts pressure on banks to reduce costs and as a driver for an efficient banking sector. Banks have largely shifted from traditional and manual methods of banking to modern and automated systems. There is heavy investment in modern technology and business process improvement. The relationship between efficiency and profitability of commercial banks is a matter of interest to management of any bank. Liquidity is a major concern in financial management and the banking sector in particular. Banks need some minimum liquidity level to meet customer demands. Banks must hold large amounts of liquid assets as reserves against possible demands for payment by depositors (Nzotta, 2004). The question however is what effect liquidity levels have on profitability of commercial banks. Should a bank invest in more long term assets and risk low liquidity or invest in short term assets and maintain a health liquidity level.

Several studies have been carried out on the effect of branch networks and bank size on profitability. For instance, a study conducted by Alawa (2015) on the Jordanian commercial banks was used to determine the effect of branch networks and bank size on profitability. The result from the study indicated that increase in bank size and branch networks reduced the profitability of banks in Jordan. From this research that was carried out in Jordan, we may then infer that an increase in branch

networks will lower bank profitability while a decrease will increase their assets and profitability during their years of operation. In a study carried out by Olajide and Segun (2016) on branch network growth and banks performance in Nigeria (1981-2013), the findings from the study were that the more the branches are opened, the better the performance of the banks on their asset and other forms of measuring performance. A study carried out by Muhindi and Ngaba (2018) looked at the effect of firm size on financial performance of banks in Kenya. The findings of the study revealed that banks that have more branches, high customer deposits, high capital base and large loan book have positive and high return on assets as compared to banks that have low level of branches networks, low customer deposits, low capital adequacy and low credit level.

To determine the impact of the internal determinants on profitability, Onuonga (2014) did a study of Kenya`s top six commercial banks. The findings revealed that capital strength, bank size, bank operation expenses, ownership, and the ratio of loans to assets were the major significant determinants of the profitability of the top six commercial banks in Kenya. The results also showed that improvement in capital strength of commercial banks leads to higher profits and that ownership was a significant determinant of performance of Kenya`s largest six commercial banks. Foreign ownership enhanced profitability of the commercial banks. On a study on the determinants of commercial banks profitability in Pakistan, Aman, Tariq, Usman and Mir (2014) from their study concluded that the capital strength of a bank is the most significant factor affecting its performance. A well-capitalized bank was observed to be less risky by the customers giving it an edge over the competitors which leads to high profitability. The asset quality and bank size also had a positive and direct relationship with bank profitability.

A study was carried out by Chenoa, Chingombe and Chawuruka (2015) on the effect of capital adequacy on profitability of commercial banks in Zimbabwe. From the research findings, it was concluded that higher capital requirements enabled banks to make profits through cheap funding. Further, the research findings showed that there was a positive relationship between capital adequacy, bank competitiveness, bank strength and the overall profitability of a bank. The research findings indicated that a bank with adequate capital was more competitive given that it had the ability to offer a wide range of products and services than the competitors and eventually have a larger market share. There is a positive and highly significant relationship between capital ratio and profitability in Sri Lankan domestic commercial banks (Kawshala &Panditharathna, 2017). The study involved use of panel data extracted from the annual reports of the domestic commercial banks in Sri Lanka, for the years 2011-2015.

There is a positive but insignificant relationship between capital adequacy ratio and bank profitability. This implies that capital adequacy has no significant impact on bank performance (Serwadda, 2018). The aim of the study by Serwadda (2018) was to investigate the impact of bank internal factors on the profitability of Hungarian commercial banks for the period ranging 2000–2015. Balanced panel data was employed in this research with a sample size of twenty-six banks and four hundred sixteen observations for the period 2000-2015. In a study on the impact of bank size on profitability ‘an empirical study on listed Jordanian commercial banks’, the study’s final conclusion was that bank size effect exists, that small and medium sized banks exhibit higher overall performance compared to large banks (Alawa, 2015).

Flamini et al. (2009) from their study of the Determinants of Commercial Bank Profitability in Sub-Saharan Africa concluded that apart from credit risk, higher returns on assets are associated with larger bank size. Further findings were that activity diversification, and private ownership had a

positive relationship with bank profitability. The profitability of the banks was also affected by the macroeconomic variables, implying that those macroeconomic policies and actions by governments that promoted low inflation and stable output growth enhanced credit uptake and growth and bank profitability. Firm size has a positive relationship with profitability of commercial banks in Kenya (Maina, Kiragu & Kamau, 2019). This was out of a study on the relationship between firm size and profitability of commercial banks in Kenya. The research employed a descriptive research design and used secondary data extracted from the annual reports published by the banks and the Central Bank of Kenya.

As per a study on the determinants of conventional banks profitability in developing and underdeveloped Organization of Islamic Cooperation countries (Al-Harbi, 2019), bank size as well as GDP per capita and market capitalization have no impact on profitability. The results further suggested that capital adequacy, foreign ownership, off-balance sheet transaction, real gross domestic product growth, real interest rate and the level of concentration affected banks' profitability. Further, the findings showed that the banking sector development and credit growth improved banks' performance in the long run in the countries where the study was done. In contrast, the study reported that higher deposits lowered profitability. To determine and evaluate the effects of bank size on the profitability of commercial banks in Nepal, a study was done by Tharu and Shrestha (2019) for the period 2013 to 2018. This study adopted panel data analysis technique and utilized both inferential and descriptive statistical tools. The results of different tests proved that profitability of banks was not significantly influenced by size of the bank. If a bank decides to expand its bank size, it could face reducing profits (Tam, Trang & Hanh, 2017). This was the conclusion from the study on the determinants of bank profitability: The case of commercial banks listed on the Vietnam's Stock Exchange.

According to Thota (2013) banks' size and liquidity conditions do not impact either return on equity or return on assets of the profitability measure. Bank size does not have an impact on bank profitability. The study was on the determinants of commercial banks profitability in India using an unbalanced bank level panel data, for the period 1999 to 2011. A study on determinants of financial performance of commercial banks in Kenya was done by Ongore and Kusa (2013). The study showed that efficiency had a significant positive effect on the performance of commercial banks in Kenya. The moderating effect of ownership on the profitability of the commercial banks was found not to be significant. The overall conclusion from this empirical study was that internal factors, which where controllable by management were the most significant determinants of the profitability of the commercial banks in Kenya. These research findings are in line with the efficiency structure theory which assumes that enhanced managerial efficiency leads to higher profitability.

An analysis was done by Almaqtari, Al-Homaidi, Tabash and Farhan (2018) on the determinants of profitability of Indian commercial banks. The study used balanced panel data of 69 sampled commercial banks in India for the period 2008 to 2017. The results indicated that operational efficiency had a positive impact on profitability. Other bank-specific factors such as bank size, number of branches and assets management ratio also had a positive impact on profitability. With regard to the impact of macroeconomic determinants on profitability, the results revealed that inflation rate, exchange rate, interest rate, and demonization had a negative impact on profitability. Efficiency has a negative and significant effect on profitability (Bambang & Razimi, 2018). The conclusions were out of a study on the effect of capital, liquidity and efficiency on profitability of sharia commercial banks in Indonesia. This was quantitative descriptive research using secondary data for the period 2013-2015.

The effect of bank specific factors on the profitability of 23 commercial banks operating in Pakistan for the period 2009 to 2012 was done by Dawood (2014). In the study ordinary least square method was used to investigate the effect of cost efficiency, liquidity, capital adequacy, deposits and size of the bank on the profitability of the commercial banks. The conclusion of the study was that bank specific variables of cost efficiency, liquidity and capital adequacy had a positive and significant effect on the profitability of the Pakistan commercial banks. A research on the relationship between liquidity risk and profitability of commercial banks in Kenya was carried out by Muriithi and Waweru (2017) for the period between years 2005 and 2014. The study used quantitative research design and panel regression for data analysis and a population of all the 43 commercial banks in Kenya as at December 2014. According to the findings of the study, liquidity risk had a negative effect on financial performance.

From their study on the impact of liquidity on bank profitability in Nepalese commercial banks, Pradhan and Raj Gautam (2019) found that liquid asset ratio was negatively related to return on assets and return on equity. The study therefore indicated that the higher the liquid asset ratio, the lower would be the return on assets and return on equity. The regression analysis was used to estimate the significance of liquidity management on the profitability. The study further showed that capital ratio was positively related to return on assets. This indicates that the higher the capital ratio, the higher would be the return on assets. In a study done by Kozaric and Dzelihodzic (2020), they examined how macroeconomic factors affected non-performing advances and financial stability in Bosnia and Herzegovina`s banking sector. They used data for the period 2006-2017. The results showed that improvement in macroeconomic conditions caused improvement in credit quality. Further, the findings were that better macroeconomic conditions were positively and significantly related to banking sector`s financial stability.

Banks that have a poor asset quality will require more capital so as to maintain their capital adequacy ratios in line with the declining value of assets or advances due to higher provisions for bad debts hence reduced bank profits. If the value of bad loans and investments in risky assets becomes higher or increase, then more capital will also be required (Kim & Sohn, 2017). In a research carried out by Wood and Skinner (2018), they examined the bank-specific or managerial controllable and macroeconomic factors that influenced the level of non-performing loans of commercial banks in Barbados for the period 1991-2015. A multiple regression model was utilized which included a number of macroeconomic and bank-specific variables. The results indicated that the bank-specific factors: return on equity, return on assets, capital adequacy ratio and loan to deposit ratio were significant determinants of non-performing loans, while the macroeconomic variables exerting significant influence were gross domestic product growth, unemployment and interest rate.

3.0 RESEARCH METHODOLOGY

This study used descriptive research design but quantitative in nature and employed balanced panel data. This study targeted all the commercial banks operating in Kenya as at 31st December, 2019. All the commercial banks were included to ensure that the study takes care of the overall performance of the whole banking sector in Kenya. As per the Central Bank of Kenya 2019 Bank Supervision Annual Report, there were 41 licensed commercial banks operating in Kenya as at December 31, 2019. The sample size comprised of 31 commercial banks operating in Kenya as at 31st December, 2019. Although the target population was all the 41 banks operating in Kenya as at 31st December, 2019, the sample size, however, excluded those banks that were either under statutory management or receivership. The sample also excluded any banks that may not have

operated for the 10-year period under study and those that had merged during the period. Exclusion of banks that had operated for less than 10 years, those that had merged and those under statutory management or receivership was done because the researcher was of the view that their inclusion may end up distorting the research findings. Secondary data was gathered from the annual reports of the commercial banks and reports published by the Central Bank of Kenya. Data sheets were prepared and used for collecting the required data.

The data was collected, on an annual basis, from published reports of the Central Bank of Kenya and the commercial banks operating in Kenya. The data was collected for a period of ten years (2010-2019). To ensure data collected was reliable and accurate only audited annual reports of commercial banks and the Bank Supervision Sector Reports released by Central Bank were used. Data analysis is a process meant to evaluate data by means of analytical and logical reasoning so as to scrutinize each element of the data set being evaluated which assists in inspecting, transforming, and modeling the data with the intention of finding useful information and coming up with conclusions (Bryman & Bell, 2015). The purpose of data analysis is to discover useful and relevant information and come up with conclusions and recommendations that can be used in the decision making process. Data entry, cleaning and sorting was done using Microsoft Excel. Correlation and regression analysis were used to establish the existing relationship between managerial controllable factors and the profitability of commercial banks in Kenya.

The study used the panel regression model to examine how the variables being studied affected the profitability of commercial banks in Kenya. The five variables used were branch network, capital adequacy, bank size, operational efficiency and liquidity. The model was as follows:

$$\mathbf{Y_{it} = \beta_o + \beta_1 X_{1it} + \beta_2 X_{2it} + \beta_3 X_{3it} + \beta_4 X_{4it} + \beta_5 X_{5it} + \varepsilon_{it} + \lambda t,\ i=1, 2,\ldots, N;\ t=1, 2,\ldots, T \ldots\ldots\ldots (1)}$$

Where:

Y_{it} = Profitability of commercial bank *i* at time t

$X_{1\,it}$ = Branch network of bank *i* at time t

$X_{2\,it}$ = Capital adequacy of bank *i* at time t

$X_{3\,it}$ = Bank size of bank *i* at time t

$X_{4\,it}$ = Operational efficiency of bank *i* at time t

$X_{5\,it}$ = liquidity of bank *i* at time t

β_o= A constant or fixed effect

B1-β_5=Coefficients of the regression equation

ε= Error term

λt = A constant term which can vary from time to time

i= Individual dimension (Cross sectional dimension)

t= Time dimension

In this research the moderating effect of asset quality was considered. Asset quality was taken as non-performing advances divided by gross advances.

The moderation effect of the asset quality was analyzed using the following extended model:

$$Y_{it} = \beta_o + \beta_1(X_{1it} * X_{6it}) + \beta_2(X_{2it} * X_{6it}) + \beta_3(X_{3it} * X_{6it}) + \beta_4(X_{4it} * X_{6it}) + \beta_5(X_{5it} * X_{6it}) \ldots\ldots (2)$$

X_{6it} = Moderating variable (Asset quality) of bank *i* at time t.

4.0 FINDINGS AND DISCUSSION

4.1 Descriptive Statistics

Table 1: Descriptive Statistics

Variable	Minimum	Maximum	Mean	Std. Deviation
ROA	-14.140000	10.40000	2.043010	3.107451
Branch Networks	2.0000000	203.0000	35.49677	47.99924
Capital Adequacy	-22.0000	81.40000	23.68977	11.73384
Log of Bank Size	6.373464	8.828854	7.514995	.5708187
Operational Efficiency	8.920000	133.77000	43.59929	20.90581
Liquidity Level	-1.70000	191.30000	44.95642	20.40815
Asset Quality	0.000000	51.500000	11.62648	10.29405

The results in Table 1 depicts that the commercial banks recorded a minimum profitability of -14.140000 between 2010 and 2019, while the maximum return on assets recorded between 2010 and 2019 by the commercial banks was 10.40000. The mean return on assets was 2.043010 with a standard deviation of 3.107451. The positive mean profitability implies that the commercial banks were generally stable within that period. The results also show that the commercial bank with the least number of branches had 2 branches, while the maximum number of branches recorded between 2010 and 2019 was 203. The average number of branches was found to be 35.49677, with a standard deviation of 47.99924. This result implies that the commercial banks had an average of 35 branches across the country.

The results on capital adequacy show that the commercial bank with the least capital adequacy had -22.0000, while the maximum capital adequacy was 81.40000. On the basis of the results, the mean capital adequacy was 23.68977, while the standard deviation was 11.73384. The study also found that the minimum log of bank size was 6.373464, while the maximum was 8.828854. The mean log of bank size was found to be 7.514995, with a standard deviation of .5708187. In terms of operational efficiency, the study found that the minimum operational efficiency was 8.920000, while the maximum operational efficiency was 133.77000. The mean operational efficiency was 43.59929 with a standard deviation of 20.90581. The results further show that the minimum liquidity level was -1.70000, while the maximum was 191.30000. The mean liquidity level was 44.95642 with standard deviation of 20.40815. Finally, the results show that the banks recorded a minimum asset quality of zero, while the maximum asset quality was found to be 51.500000, with a mean and standard deviation of 11.62648 and 10.29405 respectively.

4.2 Correlation Analysis

Table 2: Correlation Matrix

		ROA	Branch Networks	Capital Adequacy	Log of Bank Size	Operational Efficiency	Liquidity	Asset Quality
ROA	Pearson Correlation	1.0000						
Branch Networks	Pearson Correlation	0.3424*	1.0000					
Capital Adequacy	Pearson Correlation	0.0405	-0.2308*	1.0000				
Log of Bank Size	Pearson Correlation	0.4784*	0.7329*	-0.3032*	1.000			
Operational Efficiency	Pearson Correlation	-0.6403*	0.0664	-0.1175*	-0.2057*	1.000		
Liquidity	Pearson Correlation	0.0386	-0.2187*	0.6224*	-0.0294	-0.0101	1.000	
Asset Quality	Pearson Correlation	-0.4661*	-0.1294*	-0.2103*	-0.2674*	0.2861*	-0.2485*	1.000

The results in Table 2 show that branch networks and profitability were positively and significantly associated (0.3424*), capital adequacy was positively and insignificantly correlated with profitability (0.0405), the results also show that the bank size and profitability were positively and significantly associated (0.4784*), operational efficiency was found to be negatively and significantly associated with profitability of the banks (-0.6403*). In addition, the correlation results show that there was positive and insignificant association between liquidity and profitability (0.0386). Finally, the correlation results show that there was a negative and significant association between asset quality and profitability of the banks (-0.4661*).

The correlation results are in agreement with the conclusion made by Wadesango et al. (2018) that management controllable factors are directly related to an organization's profits and this is so because it increases customer satisfaction, loyalty and reduces fraud risk. However, these positive effects of management controllable factors can be sometimes watered down by some barriers such as lack of proper employee training, lack of support from top management and non-existence of independent audit committee in the case of large organizations. In conclusion, the researcher was optimistic that the results of his research would motivate managements of various banks to put in place effective measures to monitor and control management controllable factors.

4.3 Panel Regression Analysis

Table 3: Panel Regression Analysis

Dep Var: ROA	Coef. Std. (β)	Err.	z	P>|z|
Branch Networks	.0282855	.0072336	3.91	0.000
Capital Adequacy	-.0017785	.0138261	-0.13	0.898
Log of Bank Size	-1.734134	.5516821	-3.14	0.002
Operational Efficiency	-.1149412	.007895	-14.56	0.000
Liquidity	.0100136	.0077943	1.28	0.199
Constant	18.67428	4.172155	4.48	0.000
R Squared	0.4847			
F statistic	223.96			
P-value	0.0000			

$$\mathbf{Y_{it}}=18.67428+\mathbf{0}.0282855\mathbf{X_{1it}}-0.0017785\mathbf{X_{2it}}-1.734134\mathbf{X_{3it}}.1149412\mathbf{X_{4it}}+.0100136\mathbf{X_{5it}}$$

Where:

Y_{it} = Dependent variable (Profitability) of bank *i* at time t

$X_{1\,it}$ = Branch network of bank *i* at time t

$X_{2\,it}$ = Capital adequacy of bank *i* at time t

$X_{3\,it}$ = Bank size of bank *i* at time t

$X_{4\,it}$ = Operational efficiency of bank *i* at time t

$X_{5\,it}$ = liquidity of bank *i* at time t

The panel regression results in Table 3 show that the coefficient of determination R Square is 0.4847 indicating that branch networks, capital adequacy, bank size, operational efficiency and liquidity jointly explain 48.47 percent of the variation in profitability of commercial banks measured by return on assets. This implies that, 48.47 percent of the variation in return on assets is influenced by branch networks, capital adequacy, bank size, operational efficiency and liquidity.

The results show that branch networks positively and significantly affected profitability of commercial banks (β =.0282855, p=0.000<.05), capital adequacy was found to have a negative and insignificant effect on profitability of the commercial banks (β =-.0017785, p=0.898>.05). The study also found that bank size which was measured in terms of bank total assets had negative and significant effect on the bank's profitability (β =-1.734134, p=0.002<.05), similarly operational efficiency had a negative and significant effect on bank profitability (β =-.1149412, p=0.000<.05). Finally, the study found that liquidity had positive but insignificant effect on profitability (β =.0100136, p=0.199>.05).

The findings are consistent with the assertions by Olajide and Segun (2016) on branch network growth and banks performance in Nigeria (1981-2013) which indicated that, the more the branches are opened, the better the performance of the banks on their asset and other forms of measuring performance. The results also agree with the conclusion by Muhindi and Ngaba (2018) that banks

having more branches, high customer deposits and large loan book have positive and high return on assets as opposed to banks that have few number of branches, small customer deposits and small loan book.

4.4 Moderation Effect of Asset Quality

Table 4: Panel Regression Analysis

Dep Var: ROA	Coef. Std.	Err.	z	P>|z|
Branch Networks*Asset Quality	-.0007051	.0004209	-1.67	0.094
Capital Adequacy*Asset Quality	-.0029097	.0007571	-3.84	0.000
Log of Bank Size*Asset Quality	.0179906	.00606	2.97	0.003
Operational Efficiency*Asset Quality	-.0034389	.0004558	-7.54	0.000
Liquidity*Asset Quality	.0013557	.000544	2.49	0.013
Constant	2.789232	.3749702	7.44	0.000
R Squared	0.5162			
F statistic	109.37			
P-value	0.0000			

The R^2 for the management controllable factors before moderation was 48.47 % but after moderation, the R^2 increased significantly to 51.62%. This implies that asset quality moderates branch networks, capital adequacy, bank size, operational efficiency and liquidity on profitability of the banks. The moderating effect of asset quality revealed that there was a negative and insignificant relationship between branch network and profitability (β =-.0007051, p=0.094). This was supported by a calculated t-statistic of 1.67 that is less than the critical t-statistic of 1.96. The moderating effect of asset quality had a negative and significant effect on the relationship between capital adequacy and profitability (β =-.0029097, p=0.000). This was supported by a calculated t-statistic of 3.84 that is larger than the critical t-statistic of 1.96.

Further, the results revealed that the moderating effect of asset quality had a positive and significant relationship between bank size and profitability (β =.0179906, p=0.003). This was supported by a calculated t-statistic of 2.97 that is larger than the critical t-statistic of 1.96. Additionally, the results revealed that the moderating effect of asset quality had a negative and significant relationship between operational efficiency and profitability (β =-.0034389, p=0.000). Finally, the moderating effect of asset quality had a positive and significant relationship between liquidity and profitability (β =.0013557, p=0.013). This was supported by a calculated t-statistic of 2.49 that is larger than the critical t-statistic of 1.96. The results on asset quality are in agreement with the conclusion by Kadioglu, Telceken and Ocal (2017) that higher non-performing loans lower asset quality leading to lower return on equity and assets and lower non-performing loans result in higher asset quality, leading to the higher return on equity and return on assets.

4.5 Hypotheses Testing

Hypotheses were tested using multiple linear regression analysis as represented in Table 3.

H_{01}: There is no statistically significant relationship between branch network and profitability.

The hypothesis was tested by using multiple linear regression and determined using p-value. The acceptance/rejection criterion was that, if the p value is less than 0.05, we reject the H01 but if it is

more than 0.05, the Ho1 is not rejected. The results in Table 4.10 indicate that branch network had a statistically significant effect on profitability ($p<0.05$). The null hypothesis was therefore rejected. The study hence adopted the alternative hypothesis that there is a statistically significant relationship between branch network and profitability.

H_{02}: There is no statistically significant relationship between capital adequacy and profitability

The hypothesis was tested by using multiple linear regression and determined using p-value. The acceptance/rejection criterion was that, if the p value is less than 0.05, we reject the H_{02} but if it is more than 0.05, the H_{02} is not rejected. The results in Table 3 indicate that capital adequacy had insignificant effect on profitability ($p>0.05$). The null hypothesis was therefore not rejected. The study hence adopted the null hypothesis that there is no statistically significant relationship between capital adequacy and profitability.

H_{03}: There is no statistically significant relationship between bank size and profitability

The hypothesis was tested by using multiple linear regression and determined using p-value. The acceptance/rejection criterion was that, if the p value is less than 0.05, we reject the H_{03} but if it is more than 0.05, the H_{03} is not rejected. The results in Table 3 indicate that bank size had significant effect on profitability ($p<0.05$). The null hypothesis was therefore rejected. The study hence adopted the alternative hypothesis that there is a statistically significant relationship between bank size and profitability.

H_{04}: There is no statistically significant relationship between operational efficiency and profitability

The hypothesis was tested by using multiple linear regression and determined using p-value. The acceptance/rejection criterion was that, if the p value is less than 0.05, we reject the H_{04} but if it is more than 0.05, the H_{04} is not rejected. The results in Table 4 indicate that operational efficiency had a statistically significant effect on profitability ($p<0.05$). The null hypothesis was therefore rejected. The study hence adopted the alternative hypothesis that there is a statistically significant relationship between operational efficiency and profitability.

H_{05} There is no statistically significant relationship between liquidity and profitability.

The hypothesis was tested by using multiple linear regression and determined using p-value. The acceptance/rejection criterion was that, if the p value is less than 0.05, we reject the H_{05} but if it is more than 0.05, the H_{05} is not rejected. The results in Table 3 indicate that liquidity had statistically insignificant effect on profitability ($p>0.05$). The null hypothesis was therefore not rejected. The study hence adopted the null hypothesis that there is no statistically significant relationship between liquidity and profitability.

H_{06} Asset quality does not statistically significantly moderate the relationship between management controllable factors and profitability

The hypothesis was tested by using multiple linear regression and determined using p-value. The acceptance/rejection criterion was that, if the p value is less than 0.05, we reject the H_{06} but if it is more than 0.05, the H_{06} is not rejected. The results in Table 4 indicate that asset quality had a statistically significant effect on the relationship between management controllable factors and profitability ($p<0.05$). The null hypothesis was therefore rejected. The study hence adopted the

alternative hypothesis that asset quality does statistically significantly moderate the relationship between management controllable factors and profitability.

5.0 CONCLUSIONS

The study concludes that collective effect of managerial controllable factors on profitability of Kenyan commercial banks is statistically significant but significance for each of the five independent variables when considered individually is less. For capital adequacy and liquidity, there is no statistically significant influence on performance of commercial banks in Kenya. Based on the findings, this study further concludes that branch network and profitability are positively and statistically significantly associated and related. The more branches are opened, the better the performance of the banks in terms of profitability. It also suffices to conclude that bank size negatively and statistically significantly affects the profitability of commercial banks in Kenya.

The study also concludes that operational efficiency negatively and statistically significantly affect banks' profitability in Kenya. Indeed, operational efficiency was the greatest endogenous variable under the control of bank management that determined the profitability level of commercial banks in Kenya. Moreover, there was a statistically significant moderating effect of asset quality on the relationship between managerial controllable factors and performance of commercial banks in Kenya. The commercial banks in Kenya should therefore endeavor to adequately manage their credit risk and diversify their assets and streams of income so as to remain stable and profitable.

6.0 RECOMMENDATIONS

Based on the findings and the conclusions of this study the management of commercial banks in Kenya should invest in the management controllable factors to improve on their profitability. In particular, banks should focus on investing in attracting more customers by increasing the number of branches since branch network play a pivotal role in a bank's profitability, investing in growth to enjoy economies of scale from bank size and improving operational efficiency by investing in technology and innovations.

Further, management of commercial banks should identify, rank and control managerial controllable factors affecting performance of their respective banks based on their level of significance on performance. It is critical for commercial bank managers to understand what parameters should be kept at bear minimum so as to comply with the regulatory and prudential guidelines and those that must be enhanced to increase the profitability of their institutions.

Policy makers and regulators should enhance and implement policies that help commercial banks maintain the right level of capital adequacy and liquidity to ensure that performance of commercial banks is not adversely affected by either overcapitalization or undercapitalization and too high or too low liquidity level regulatory requirements.

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