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*Analysis of the factors affecting Commercial Banks
Financial Performance: Evidence from Tanzania*

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Analysis of the factors affecting Commercial Banks Financial Performance: Evidence from Tanzania

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Abstract

Purpose: The study examined the factors affecting the financial performance of fifteen commercial banks in Tanzania over ten years, from 2012 to 2021. This study focused much on specific internal factors.

Design/methodology/approach: The study employed descriptive research design to ascertain the causal relationship between the dependent variable and independent variables within commercial banks in Tanzania. Secondary data were obtained from audited financial statements and annual reports. Before regression analysis, preliminary tests were performed and diagnostic tests were conducted.

Findings: Findings indicate that the financial performance of commercial banks in Tanzania is influenced by bank size, earning quality management, assets quality management, and capital adequacy

Research Limitations/Implications: The study covered from 2012 through 2021, this study employed CAMEL analysis on Tanzania commercial banks.

Practical implications: This study provides valuable insights to policymakers and bank owners on the factors that influence bank performance and ensure optimal utilization of resources to sustain competitiveness.

Keywords: *asset quality, capital adequacy, commercial banks, financial performance*

Introduction

In the aftermath of the 2007/8 financial crisis, banking sectors across both developed and developing countries have become increasingly concerned about the proper management of their banks and other financial institutions. This is due to the uncertainty surrounding the future and its potential impact. Consequently, every commercial bank, regardless of its economic status, is now willing to understand the factors that may negatively or positively affect its financial performance (Wambari & Mwangi, 2017). Recognizing the vital role commercial banks play in ensuring economic growth, various governments have introduced regulations to help manage these institutions. A well-functioning financial system and efficient banking sector are essential for sustainable economic growth through investment, attracting more investors to a particular country. This is why the banking sector is often referred to as the engine of economic growth in any country (Pastory & Marobhe, 2015).

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Since the early 1990s, the banking sector in Tanzania has undergone several significant economic reforms, including the liberalization of the industry. This reform was implemented to achieve several objectives, such as promoting the formation of various banks, reducing dependence on the colonial financial system, and ensuring the availability of financial services to the community at large. The liberalization of the banking sector has been crucial in achieving these objectives and has brought about remarkable changes in Tanzania's banking industry.

Despite the introduction of various rules and regulations and the development of formal reporting systems, recent years have seen commercial banks experience consolidation, such as the merger of Twiga Bancorp with TPB Bank in 2018, resulting in a decline in the number of licensed commercial banks operating in Tanzania. While there were 59 licensed commercial banks in 2017, the number has dropped to 46 in 2021 due to license cancellations by the Bank of Tanzania, with five banks having their licenses canceled in 2018 alone, as they failed to meet capital requirements (BOT, 2021; PwC Report, 2020). These factors, together with variable bank profitability trends, point to an underlying issue with Tanzanian commercial bank performance.

Research Problem

Over the past decade, Tanzania's commercial banks have experienced fluctuations in performance, as indicated by their profit before tax from 2012 to 2021. While profits increased from 2012 to 2015, they dropped significantly from 676 billion in 2015 to 313 billion in 2018, representing a 54% decrease, although years from the year 2019 upward trend experienced the increment was insignificant given the fact that the country's economic growth rate in that period was high and the country undergone various reforms that have influenced economic growth. Additionally, the number of registered commercial banks decreased during this period. However, despite expectations of poor performance due to an increase in mobile transactions, the trend for commercial banks improved between 2019 and 2021. From this perspective, the researchers opted to conduct a financial performance analysis of commercial banks in Tanzania both listed and non-listed from 2012 through 2021.

Research Objective

The general objective of this study was to analyze factors affecting the performance of selected commercial banks in Tanzania.

The specific objectives of the study were:

- (i) To analyze the impact of capital adequacy on the performance of commercial banks
- (ii) To analyze the effect of asset quality on the performance of commercial banks
- (iii) To analyze the influence of management efficiency on commercial banks' performance
- (iv) To examine the Earning Quality effect on the performance of commercial banks
- (v) To examine the impact of liquidity level on the performance of commercial banks
- (vi) To analyze influence of bank's size on its financial performance

Significance of the Study

Given the importance of banks industry in economic development, this study findings can serve as a valuable resource for crafting policies that foster a conducive environment for commercial banks and other financial institutions to thrive and contribute. Again, it contributes to the academic environment by laying a solid basis for future research and intellectual pursuits. Armed with this information, banks may make educated strategic decisions that will not only preserve but significantly improve their performance and profitability. The repercussions of this extend beyond the banking industry to the larger Tanzanian economy, since the health and stability of commercial banks are inextricably linked to the country's overall financial well-being.

Literature Review

This paper used the signal theory signaling theory can be used to describe behavior when different side in relationship have differing level of information. Typically, the sender must decide whether and how to transfer that information, and the recipient must decide how to interpret the information.

Signal theory

In financial management, signal theory investigates how a company's management practices communicate signals to external parties. As underlined by Connelly et al. (2011), these signals, whether explicit or implicit, try to impact the company's valuation by altering external perceptions of its prospects.

Signaling theory implies that efficient management choices in commercial banks can send positive signals to stock market investors, boosting investments and increasing capital. This study emphasizes that

competent management decisions cover a variety of characteristics, including capital sufficiency and asset quality, which combined have a major influence on commercial bank performance.

The theory originally suggested by Ross (1973) relates to interaction amongst two parties, one party known as an agent while the other principal. Jensen and Meckling (1976) argued that there is existence of principal to agent relationship where the shareholders engage managers to manage their investments professionally and eventually create wealth for them. The company ownership is separated from control which brings about the problem of conflict of interest. The theory advocates the introduction of good board practices to ensure managers act in line with owner's interest. In the study, the government are the owners of the entities, hence the principals, while the board and management constitute the agents. The theory has been criticized for leaving out other players in the running and control of the company. The decisions made by managers may therefore create wealth for owners but leave out other stakeholder's interests (Grundeis, 2008). Agency theory is relevant since it predicts enhanced firm performance if good board practices are adopted through effective board oversight that ensures accountability, transparency and disclosure mechanism, gender equality and audit committee effectiveness.

Empirical Review

Empirical studies on the drivers of bank performance were conducted in several countries with varying social and economic conditions, utilizing bank-specific and industry-specific factors. This empirical assessment considers both rich and emerging economies. In general, different studies' conclusions on various aspects influencing commercial bank performance were shown to contradict one another as discussed below.

Previous literature on performance of commercial banks has mixed results. For instance, Menicucci and Paolucci (2016) investigated the relationship between bank-specific characteristics and profitability in the European banking industry. According to the regression results, capital adequacy ratio and bank size have a favorable effect on bank profitability, however higher asset quality results in lower profitability levels. This matches with a study by (Roman & Tomuleasa, 2014) who conducted a study on the analysis of profitability determinants evidence of commercial banks in the new EU member states and the study indicates that most of the countries' performance of commercial banks is most significantly influenced by capital adequacy. According to Nisar et al (2015) in their study carried out in Pakistan banks from 2006 to

2013 their outcome showed that capital sufficiency had a favorable impact on profitability but nonperforming loans, liquidity, administrative expenses and all harmed profitability.

Serwadda (2018) conducted a study on the determinants of commercial banks' profitability evidence from Hungary and result indicated that capital adequacy and earning quality have insignificant influence on performance while management efficiency, asset quality, and liquidity management are found to have a positive and significant influence on commercial banks performance. This is contradicting other studies as discussed above.

Magoma et al (2022) used the CAMEL model to investigate the determinants influencing commercial bank performance in Tanzania and discovered that capital adequacy has a substantial influence on the ROA of listed commercial banks. Dembel (2020), on the other hand, used the CAMEL model to explore factors impacting listed commercial banks in Ethiopia, demonstrating a negligible and negative association between capital adequacy and performance. In contrast, Frederick (2014) examined the factors impacting commercial banks in Uganda and concluded that capital sufficiency had a substantial and favorable influence on performance from 2000 to 2011. Gautam (2020) did similar research on Financial Performance Analysis.

San & Heng (2013) in a study conducted in Malaysian specifically to analyze factors affecting commercial banks' performance the analysis result indicated that not all internal involved were found to be significant but factors such as asset quality, liquidity, and earning quality were found to be significant concerning performance of commercial banks in Malaysia for the period covered by the study although some of the factors are significant but negatively related to a dependent variable. this also still indicates mixed findings. Kadioglu et al (2017) discovered a substantial negative association between asset quality, especially non-performing loans, and commercial bank profitability (ROA). In contrast, Al Zaidanin (2020) discovered that asset quality had no significant influence on performance when assessing Jordanian commercial banks using the CAMEL Model. Weersainghe and Perera (2013) discovered no effect of asset quality on bank performance in their research of Sri Lankan commercial banks from 2001 to 2011. However, Frederick (2014) examined domestic commercial banks in Uganda from 2000 to 2011 and discovered that asset quality had a substantial impact on performance. Similarly, Ngumo (2017) investigated Kenyan microfinance institutions and concluded that financial success is directly connected to identified factors.

Conceptual Framework

The primary goal of this research is to look into the elements that influence the performance of commercial banks in Tanzania. ROA has been used as a performance indicator factor, and independent variables are capital adequacy ratio, asset quality management, management efficiency, earning quality management ratio, and liquidity management ratio. Figure 1.1 depicts the cause and relationship between dependent and independent variables.

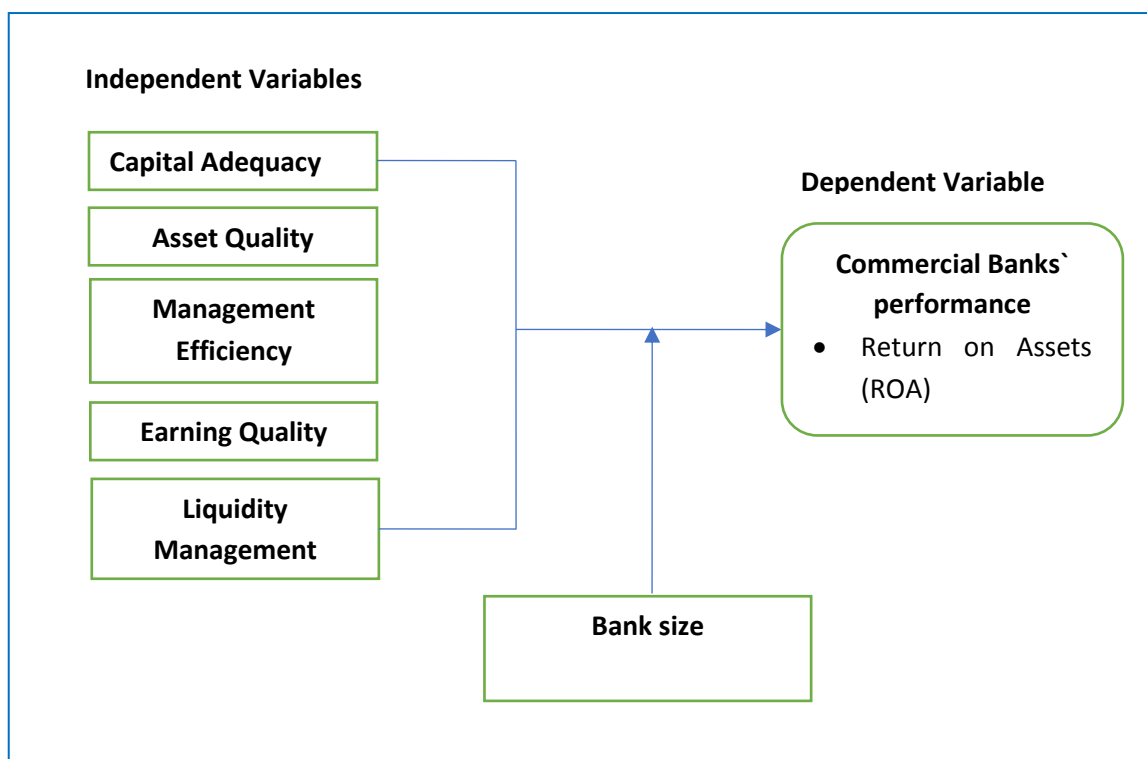


Figure 1 Conceptual Framework

Research hypothesis

This report created six research hypotheses based on the empirical literature review described above to investigate the factors that affect commercial banks' financial performance in Tanzania. The specific purpose of this research was to investigate the impact of capital adequacy, assets quality management, management efficiency, earning quality management, liquidity management, and bank size on the financial performance of commercial banks in Tanzania. See table one below.

Table 1 list of hypotheses

H ₁ : There is a positive relationship between Capital adequacy and commercial banks' performance.
H ₂ : Asset quality significantly and positively affects the performance of commercial banks
H ₃ : Management efficiency has a significant effect on commercial banks' performance
H ₄ : Earning quality management has a significant effect on the performance of commercial banks.
H ₅ : Liquidity position has no impact on commercial banks' performance
H ₆ : Bank size does not influence commercial banks' performance.

Methodology

Sample and data

This paper examined the factors affecting commercial banks' financial performance in Tanzania. 15 commercial banks were included as a sample size representing the total population of commercial banks in Tanzania. In Tanzania there are 34 commercial banks; 7 listed in the DSE and 28 are private commercial banks. Total of 19 banks that has less than 8 years of operation were excluded, data was obtained for the period starting 2012. This accounted for all most 50 percent of all commercial banks in Tanzania. Secondary data were obtained from audited financial statements from individual banks' websites and the Bank of Tanzania database from 2012 to 2021. The study used unbalanced data from 15 commercial banks in Tanzania for ten years containing 147 observations.

Variables Descriptions

Independent Variables

Capital Adequacy

According to Menicucci & Paolucci (2016) and (Pastory & Marobhe, 2015), capital adequacy has a significant and positive relationship with commercial bank performance. That is, well-capitalized banks earn larger returns, lowering their cost of funding and lowering their chances of going bankrupt. Lower capital ratios in banking, on the other hand, suggest greater leverage and risk, and thus higher borrowing rates. (Pastory& Marobhe, 2015).

Asset Quality Management

Magoma & Mwashu (2022) and Menicucci & Paolucci, (2016) the studies show that asset quality has a positive relationship with commercial bank performance but is insignificant. This suggests that additional

loans enhance the likelihood of increased profitability, but because there is an insignificant link between commercial bank performance and asset quality, the effect is inconclusive. However, this is different from other findings by other researchers like finding by (Hosen, 2020).

Management Efficiency

According to Ongore (2013) one of the internal elements that has a beneficial impact on commercial bank performance is managerial efficiency. This may be shown using several financial ratios, such as total growth rate and others. Management efficiency is commonly used to assess management's skill in monitoring various operations with the goal of achieving exceptional performance; however, it can also be used to measure how a specific management deals with various circumstances and risk factors (Al Zaidanin, 2020).

Earning Quality Management

Earning quality as measured by net interest income divided by total asset value, has a negative and considerable impact on a commercial bank's performance. Previous research has found a negative and substantial relationship between earning quality and commercial bank performance (Dembel, 2020).

Liquidity Management

According to Lema (2019) when a bank is very liquidity is easier to meet daily requirements, which improves its performance capabilities. The amount of liquidity in commercial banks has a positive association with their performance (Lotto, 2019).

Dependent Variable

According to the conceptual framework presented above, the performance of commercial banks examined in this study using return on assets (ROA). ROA measures the bank's management's capacity to generate money/revenue by employing firm assets. In other words, it demonstrates how effectively the company's resources are utilized to generate revenue. ROA also shows the performance or profitability of a commercial bank relative to the bank's shareholders' wealth (Hawaldar et al., (2017). According to Kadioglu et al., (2017), a greater ROA indicates that the company is more efficient in its resource utilization.

Control Variable

Bank size was used as a control variable in this study to standardize the comparison of commercial banks during the analysis. This is due to the fact that the study included a range of commercial banks of various sizes, including both small and large ones. As a result, bank size was used as a control variable to improve the logical coherence of the comparisons. (Hosen, 2020) and (Raphael, 2013) discovered that bank size is substantial and positively connected to commercial bank performance.

Table 2: Variable Descriptions

Variables	Measurements	Notation
Dependent variable Commercial bank Performance Return on asset	Operating profit / total assets ratio	ROA
Independent Variables		
Capital adequacy	Total equity/Total asset	CA
Asset quality management	Non-performing loan/gross loan	AQ
Management efficiency	Total loan/total deposit	ME
Earning quality Management	Net interest income/Total asset	EQ
Liquidity management	Liquid asset/Total asset	LM
Bank size	Logarithm of total assets	BS

The method and model specification

This study utilized panel unit root testing for data stationarity as well as Hausman's testing for REM and FEM selection, with the testing indicating that FEM will be chosen. The equation below explains the multiple regression model employed in this work.

$$ROA = \alpha + \beta_1(CA) + \beta_2(AQM) + \beta_3(ME) + \beta_4(EQM) + \beta_5(LM) + \beta_6(BS) + \epsilon.$$

Where:

ROA = Commercial Banks` performance

α = Constant

β = the slope

(CA) is for Capital Adequacy; AQM is for Asset Quality Management; (AQM) stands for Asset Quality Management; (ME) stands for Management Efficiency; (EQM) stands for Earning Quality Management; Liquidity management (LM); (BS) is the bank size, and ϵ is the error term.

A multiple Regression analysis for panel data test with 5% significance and 95% confidence was used to determine the strength of the relationship between the dependent and independent variables.

Findings and Results Discussions

Descriptive statistics

The descriptive outcome of the main variables used in this paper both independent dependent and control variables from 15 commercial banks in Tanzania of which there are financial data were obtained from 2012 to 2021 are as shown below in Table 3

Table 3. Descriptive statistical results of Variables under Study

Variable	Obs	Mean	Std. Dev.	Min	Max
Return on Assets (ROA)	147	.0136068	.0269313	-.1338	.0903
Capital Adequacy (CA)	147	.1479857	.0519461	.0775	.5652
Asset Quality Management (AQM)	147	.0710102	.0568069	0	.3061
Management Efficiency (ME)	147	.7033775	.1669575	0	1.0062
Earning Quality management (EQM)	147	.0701116	.0275615	.0103	.1852
Liquidity management (LM)	147	.2988258	.1255722	.0322	.7189
Bank size (BS)	147	13.09113	1.388413	8.8636	15.9923

Multiple Regression Diagnostic Tests.

Table 4 below shows diagnostic tests that have test in this study to enhance reliability of data and conclusion of the study and their implication see table below

Table 4 Diagnostic test

Diagnostic Tests.	P- value and Mean VIF	Implication
Multicollinearity	1.16	No multicollinearity
Normality	0.0046	Distribution is not normal
Heteroskedasticity test	0.0000	Heteroskedasticity problem
Serial Autocorrelation	0.0424	serial correlation problem

Multiple Regression Analysis Results

Table 5 below display the results of the multiple regression analysis, which show that the coefficient of overall R square was 26.63%, indicating that the independent variables in the model explained 26.63% of the variation in the dependent variable. The multicollinearity diagnosis test was used to determine if the data met the basic assumptions of the traditional linear regression model. In table 5 above, the results show that the VIF value is less than 10 and 5 which is the rule of thumb. Therefore, given that VIF is within the limit it means the independent variables used in this study are not highly related which means they can be good predictors for the dependent variable.

Table 5. Multiple Regression Analysis Results

Fixed-effects (within) regression	Number of Obs	= 147				
Group variable: Bank ID	Number of groups	= 15				
R-sq: Within = 0.3532	Obs per group: Min	= 8				
Between = 0.2849	Avg = 9.8					
Overall = 0.2663	Max = 10					
	F (6,14)	= 6.67				
corr(u _i , Xb) = -0.6484	Prob > F	= 0.0017				
Std. Err. adjusted for 15 clusters in Bank ID						
roa	Coef.	Robust Std. Err.	t	P>t	[95% Conf. Interval]	
CAR	- 0.1411	0.05928	- 2.38	0.032	- 0.26833	-0.01404
AQM	- 0.0929	0.04138	- 2.25	0.041	- 0.18173	-0.00423
ME	0.0095	0.01457	0.65	0.524	- 0.02172	0.04076
EQM	0.5280	0.21808	2.42	0.030	0.06030	0.99578
LM	- 0.0084	0.02369	- 0.36	0.727	- 0.05926	0.04238
BS	0.0152	0.00512	2.97	0.010	0.00421	0.02619
Intercept	- 0.1990	0.07789	- 2.56	0.023	- 0.36612	-0.03201
sigma_u	0.02137					
sigma_e	0.01851					
rho	0.57135	(Fraction of variance due to u _i)				

The results on capital adequacy are presented in Table 9. The Capital Adequacy Ratio has an inverse relationship with the dependent variable, supporting previous research by Frederick (2014) and Cekrezi (2015) that suggests capital adequacy may have a negative impact on commercial bank financial performance. These findings, on the other hand, contradict recent findings by Magoma et al. (2022), who argue for a positive link between capital adequacy and commercial bank performance. As a result of this research, it is recommended that commercial banks maintain an ideal level of capital sufficiency in order

to avoid excessive capital lockup. Instead, they should reinvest excess assets in productive ventures to boost shareholder returns.

The results on asset quality are presented in Table 9. The results show that asset quality management has a substantial negative association with ROA (Return on Assets). This implies that when the proportion of non-performing loans grows in comparison to total assets, the company's profitability from these assets decreases. These findings, however, contradict Lema's (2019) and Muhmad and Hashim's (2015) findings, which found a favorable but negligible association between asset quality management and ROA. Our findings, on the other hand, are consistent with those of Helhel (2014), Al Zaidanin (2020), and Magoma et al. (2022).

According to the data, the management efficiency ratio has a positive but statistically insignificant link with commercial bank performance ($p = 0.524$). This result contradicts our original predictions of a major effect on bank performance, as opposed to the findings of Magoma et al (2022), and Ongore (2013), who found a positive and significant relationship between managerial efficiency and bank performance. However, these findings are consistent with those of Gautam (2020) and Menicucci and Paolucci (2016). In essence, it demonstrates that competent management does not ensure great financial success for Tanzanian commercial banks.

Earnings quality management had a good and statistically significant influence on commercial bank performance ($p = 0.030$), according to the research findings. This means that improved earnings quality management leads to improved commercial bank performance. These findings contradict those of Magoma et al. (2022), although they are consistent with those of Muhmad and Hashim (2015).

Liquidity management in Table 4.6, show that liquidity management has a negative and non-significant influence on the performance of commercial banks over the research period. This implies that excess liquidity binds up funds, making it difficult to engage in activities that may create greater cash flow. This finding might be impacted by the growing usage of internet banking, which discourages excessive cash hoarding. These findings are consistent with those of Lema (2019) and Cekrezi (2015), but differ from those of Magoma et al. (2022) and Hosen (2020).

According to Samad (2015), bank size, evaluated as the logarithm of total assets, has a substantial positive connection with the dependent variable, ROA, in this study. These data suggest that an increase in bank size leads to an improvement in commercial bank performance. Notably, these findings differ from the researcher's predictions but are consistent with Hosen's (2020) findings. They, on the other hand, contradict the findings of Menicucci and Paolucci (2016) and Pastory and Marobhe (2015).

Empirical model

$$ROA = -0.19907 - 0.14119CAR - 0.09298AQM + 0.00952ME + 0.52804EQM - 0.00844LM + 0.01520BS$$

Where by: (ROA) return on assets; (CAR) capital adequacy ratio; (AQM) assets quality management; (ME) management efficiency; (EQM) earning quality management (LM) liquidity management; (BS) bank size

According to the model, a 0.14119 rise in CAR corresponds with a 1-point fall in ROA, indicating a negative relationship between CAR and ROA. Similarly, a rise in AQM of 0.09298 results in a 1-point fall in ROA, indicating an inverse link. A 0.00952 rise in ME, on the other hand, leads in a 1-point gain in ROA, whereas a 0.52804 increase in EQM results in a 1-point increase in ROA. A 0.00844 rise in LM results in a 1-point fall in ROA, but a 0.01520 increase in bank size results in a 1-point improvement in ROA.

The empirical model's results show that capital adequacy ratio (CAR), assets quality management (AQM), and liquidity management (LM) have a negative relationship with commercial banks' financial performance (ROA) in Tanzania. In contrast, management efficiency (ME), earning quality management (EQM), and bank size (BS) all have a favorable relationship with commercial bank performance.

Conclusions and Recommendations

The empirical study found that capital sufficiency, asset quality management, earnings quality, and bank size all had a substantial influence on commercial bank performance in Tanzania. Notably, of these criteria, bank size appeared as the most important. This emphasizes the necessity of effective resource allocation, which allows commercial banks to manage their operations more efficiently and engage in productive projects for higher profits. The study also discovered that excessive liquidity had a negative impact on commercial bank performance, implying that rising liquidity resulted in lower performance. As a result of the findings, commercial banks should invest in profitable ventures rather than retaining extra cash. Finally, this study shows that internal parameters measured using the CAMEL approach are capital, asset quality

management, earnings quality, and bank size have a considerable impact on commercial bank performance. To avoid negative consequences on performance, these internal elements must be well managed.

Commercial banks in Tanzania play an important role in fostering long-term economic growth by allowing the movement of cash between surplus and deficit units. Commercial banks are used by the government to accelerate economic growth through efficient money circulation. Furthermore, the central bank (BoT) controls the economy by enacting and overseeing solid policies and regulations in order to keep the financial system stable. While this study found successful central bank regulations, it advises that the government should develop and improve policies to safeguard Tanzania's commercial banks' long-term resilience and adaptation, eventually giving positive and attractive returns to their shareholders.

The researcher recommends in this study that the government, aided by the Bank of Tanzania (BoT), consistently support the financial sector by providing subsidies, special loans, and other necessary assistance to improve and ensure Tanzania's strong financial performance, even in the absence of a pandemic. To maintain economic development and sector stability, commercial banks and the central government must work together to deploy effective tools, addressing underperformance in Tanzania's commercial banking sector and the financial industry as a whole.

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