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CASH FLOW ACTIVITIES AND PROFITABILITY OF COMMERCIAL BANKS IN KENYA

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ABSTRACT

Historically, Kenyan commercial banks have been profitable; however, in recent years, their performance has been inconsistent, as demonstrated by fluctuating pre-tax profits. The purpose of this study was to determine the effect of cash flow activities on the profitability of commercial banks in Kenya. The study specifically examined the effects of cash flow from operating, investing, and financing activities, as well as free cash flow, on profitability. The study was guided by the Free Cash Flow Theory, Baumol's Model of Cash Management, and the Balanced Scorecard Model. A cross-sectional research design was adopted, and all 38 licensed commercial banks operating in Kenya as of December 2024 were included in the study using a census approach. Secondary data were collected from published financial statements and Central Bank of Kenya reports. Quantitative analysis was conducted using correlation and linear multiple regression models. Results from the regression analysis revealed that operating activities cash flow had the strongest positive and significant effect on profitability ($\beta = 0.458$, $p = 0.000$), followed by free cash flow ($\beta = 0.276$, $p = 0.001$) and financing activities cash flow ($\beta = 0.161$, $p = 0.013$). In contrast, investing activities cash flow had a significant negative effect on profitability ($\beta = -0.237$, $p = 0.004$). The model explained 56.1% of the variation in profitability ($R^2 = 0.561$), and the regression was statistically significant ($F = 59.279$, $p = 0.000$), indicating that cash flow activities are important determinants of bank performance. The study concludes that efficient management of operational and free cash flows significantly enhances profitability, while heavy or poorly timed investing activities can reduce short-term returns. Banks that effectively manage financing activities also experience improved performance. Based on these findings, it is recommended that commercial banks in Kenya strengthen operational cash collection processes, strategically plan investment outflows, optimize financing strategies, and maintain adequate free cash flow to enhance overall profitability.

Key Words: Cash Flow, Operating, Investing, Financing Activities

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INTRODUCTION

The escalating intensity of banking crises, mainly since the global financial crisis 2008, has resulted in the downfall of prestigious international banking institutions (Magati, Nyanga'u, & Onwonga, 2023). The most significant factor was the apparent deficiency in these banks' financial. Commercial banks in the present day volatile environment are facing a large number of risks such as credit risk, liquidity risk, foreign exchange risk, interest risk and market risk among others. This makes banking to be a business of risk and for this reason, efficient cash flow management is extremely required.

Cash flow management is concerned with maximizing cash accessible, increasing interest received on non-required surplus money as soon as possible, and preventing losses caused by fund transfer delays (Wetson & Copeland, 2018). The opportunity cost of holding cash to meet short-term demands is equivalent to the return that could have been achieved if the money had been saved or put to better use (Bari, Samantar & Muturi, 2019). Running on insufficient cash reserves to lower the opportunity cost may, however, increase the risk of not meeting commitments when they are due, therefore an optimal cash balance should be established. Cash flow components include operating cash flow, investment cash flow, and finance cash flow (Block & Hirt, 2017).

In Taiwan, Wang (2010) uses data from publicly listed companies to examine the association between free cash flow and agency costs and how these two factors influence firm performance. The results show that free cash flow can induce agency costs. However, the achievement of free cash flow resulting from internal operating efficiency could lead to better firm performance despite the existence of agency costs. In Tehran, Heydari et al. (2019) assess the relationship between free cash flow and the performance of 63 companies listed on the Tehran Stock Exchange. The study covers the period 2006–2012. Panel analysis is applied with four alternative measures of performance, i.e. return on assets, return on equity, Tobin's Q and stock return. The findings show that there is a significantly negative relationship between free cash flow and all performance measures.

The banking sector in Africa and the rest of the developing world has experienced major transformation in its operating environment. In a number of countries, financial sector reforms have been implemented. In Ethiopia, during 2012 to 2016, for example, the Ethiopian banks recorded a constant decrement in their profitability. The results point out that profitability measured by ROA and ROE reduced from 5.39% to 3.75% and 75.26% to 54.08% in 2012 and 2016, respectively. Moreover, the Ethiopian banks have reported a slight profitability growth and continuous decline during 2017 to 2019 and 2020 to 2022, respectively (Berhe, 2024).

The banking sector in Kenya has been a cornerstone of economic development, facilitating credit access, job creation, and wealth generation, as evidenced by the Banking Industry Shared Value Report (2019). However, over the past two decades, commercial banks have faced persistent challenges with non-performing loans (NPLs), which have historically increased, impacting profitability and financial stability (Okombo, 2018). The Cytonn report (2022) notes a long-term trend of rising NPLs, though recent CBK data shows a slight decline, with the NPL ratio dropping from 14.1% in December 2021 to 13.9% in December 2022, and further to approximately 12% by the end of 2022, as per the CBK Supervision Report (2023).

Historically, Kenyan commercial banks have been profitable (Oloo, 2018). However, in recent years, their performance has been inconsistent, as demonstrated by their fluctuating pre-tax profits. The lowest levels were recorded in 2015, 2017, and 2020, at Kshs. 134.0 billion, Kshs. 133.2 billion, and Kshs. 112.1 billion, respectively. Return on assets and equity have also shown mixed performance, with a decreasing trend from 2014 to 2017, followed by an increase in 2018, and a decrease in 2019. These trends are not desirable, given the reforms implemented to improve commercial bank performance. Al-Qudah and Jaradat (2018) point out that the operating environment for commercial banks is constantly changing, with

profitability being crucial for their financial well-being.

According to the Central Bank of Kenya (CBK) Supervision Report (2022), as of December 31, 2022, the Kenyan banking sector was composed of a diverse range of financial institutions, including 38 commercial banks, 1 mortgage finance company, 1 mortgage refinance company, 10 representative offices of foreign banks, 14 microfinance banks, 3 credit reference bureaus, 19 money remittance providers, 8 non-operating bank holding companies, 10 digital credit providers, and 72 foreign exchange bureaus. The Central Bank of Kenya serves as the regulatory authority for this sector. Among the 39 banking institutions, 37 were privately owned, with the government holding a majority stake in only two. Of the privately owned banks, 20 were locally owned while 17 were foreign-owned, with most foreign entities operating as subsidiaries or branches of international banks.

Statement of the Problem

Kenton (2018), asserted that, operating cash flow are key in enhancing financial performance of commercial banks because the generation of positive cash flow from operations allows banks to remain viable over a long period of time. Commercial banks in Kenya have faced challenges with non-performing loans (NPLs) over the past two decades, which have historically impacted their profitability. Recent data from the Central Bank of Kenya (CBK) indicates a slight decrease in NPL ratios, from 14.1% in December 2023 to 13.9% in December 2024, suggesting some improvement in asset quality (CBK Bank Supervision Annual Report, 2024).

Economic factors such as climate hazards and fiscal consolidation challenges, as noted in the World Bank's Kenya Economic Update (2024), further complicate the banking sector's operations. These conditions affect borrowers' ability to repay loans, thereby influencing banks' cash flow management and profitability. The commercial bank's asset quality improved through a decrease of 13.9 percent in December 2024 from 14.1 percent in December 2023. Consequently, commercial banks recorded a 21.1% weighted average growth on return on average equity (RoE), 3.1% points lower than the 24.2% growth registered in Q3'2023. In 2021, with the gradual recovery of the economy, NPLs reduced slightly to around 14%, and ROA improved to 1.5%, though profitability remained constrained. By 2024, as the sector embraced digital transformation, NPLs further declined to approximately 12%, and ROA increased to 2.1%, signaling improved profitability, though the sector was still recovering from pandemic-induced pressures (CBK Supervision report, 2024).

A plethora of studies have delved into the relationship between cash flow management and the performance of banks. Studies such as Tariq and Abbas (2019) in Pakistan and Amankwah and Zhang (2019) in China, suggest a positive relationship between free cash flow and financial performance, where free cash flow is the cash left after capital expenditures and operational needs. Thus, this study sought to establish the cash flow activities and profitability of commercial banks in Kenya.

Objectives of the Study

The general objective was to determine the cash flow activities and profitability of commercial banks in Kenya. The study's specific objectives were;

- To establish the effect of operating activities cash flow on profitability of commercial banks in Kenya.
- To determine the effect of investing activities cash flow on profitability of commercial banks in Kenya.
- To determine the effect of financing activities cash flow on profitability of commercial banks in Kenya.
- To find out the effect of free cash flow on profitability of commercial banks in Kenya.

The study was guided by the following hypotheses

- **H₀₁:** There is no significant effect of operating activities cash flow on profitability of commercial banks in Kenya.
- **H₀₂:** There is no significant effect of investing activities cash flow on profitability of commercial banks in Kenya.
- **H₀₃:** There is no significant effect of financing activities cash flow on profitability of commercial banks in Kenya.
- **H₀₄:** There is no significant effect of free cash flow on profitability of commercial banks in Kenya.

LITERATURE REVIEW

Theoretical Review

Free Cash Flow Theory

The free cash flow theory was presented by Jensen in 1986. Free cash flow is monetary funds available to suppliers after the company has paid all its necessary expenses to keep the firm running. Appropriate management of the working capital components can generate additional free cash flows (Jagadish & Sharmila, 2021, p. 4426). According to Harbula (2000, p. 490), the free cash flow theory highlights the principal-agent problem and agency costs as the main cause of capital market imperfections. The agency theory is based on the relationship between the agent (the company manager) and the principal (the shareholders). The agent is hired to work for the principal's interest. The agent has more information compared to the principal because the agent is involved in the day-to-day operations. This information asymmetry can lead to the agent trying to maximize his interest instead of maximizing the shareholders' interests (Deegan & Unerman 2011, p. 263). For example, the agent may waste the free cash flow on unprofitable projects to maximize his own interest, which may create less value for shareholders (Harbula, 2000, p. 490). According to Afiezan et.al, (2020, p. 4006), research by Ramadhani and Barus (2018) shows a negative relationship between free cash flow and debt policy. However, research by Oktariyani and Hasanah (2019) cannot prove the effect of free cash flow and debt policy.

According to the free cash flow theory, free cash flow affects investment expenses. Companies that have higher free cash flows will have higher investment expenses. This connection is explained based on the asymmetric information between financing and investment behaviors (Xiaoqiang & Pan, 2010). Information asymmetry occurs because the company management's internal side has better access to information than the external side lenders. Therefore, the external financing side will demand higher compensation for the capital. That makes the external capital costs higher than the internal capital costs. For that reason, the lack of information asymmetry will lead to severe economic limitations for companies (Xiaoqiang & Pan, 2010).

Baumol Model of Cash Management

The Baumol Model of Cash Management, developed by economist William J. Baumol in 1952, provides a structured approach to managing a firm's cash balance in a way that minimizes the total cost associated with holding and obtaining cash. This model is grounded in the principles of the Economic Order Quantity (EOQ) model commonly used in inventory management. It views cash as an inventory item that needs to be replenished periodically and at optimal levels (William, 1952).

Baumol's model was based on assets similar to money (in terms of their properties) earning interest as their income, and encumbered with a relatively small risk. Those assets gave economic entities a choice of keeping their income in cash or as interest-earning assets. Keeping cash balance involves – as any other choice made by the market participants – bearing certain economic costs (Valecny, 2016). It is a natural tendency of all economic entities which are guided by rational premises either to bring those costs to a minimum or, alternatively, to maximize total utility derived from a certain solution. In his model Baumol accepted for the optimization criterion the search for such a volume of cash balance which would minimize

the total cost of its maintenance. Hence, he presented a cost-based approach.

Balanced Score Card

Kaplan & Norton (1992) introduced the Balanced Scorecard (BSC) concept. This theory was invented by US firm Analog Devices in the year 1987. The study used balanced scorecard framework as it is able to assess performance of commercial banks in numerous measures as well as dimensions. The BSC is designed to reveal the need for balance in terms of financial as well as nonfinancial aspects of clients, internal business operations, as well as improvement. BSC converts a company's purpose into a series of performance metrics, providing the necessary basis for strategic measurement as well as management (Kaplan & Norton, 1996). The study will use balanced scorecard framework as it is able to assess profitability of commercial banks in numerous measures as well as dimensions.

Empirical Review

Rehaman (2017) investigated financing cash flows in a comprehensive income and firm performance. The study aims to investigate the effect of component of cash flow statement on firm performance; effect of debts financing on firm performance and tax deduction on tax deduction on firm performance. The study 19 firms listed in Tokyo stock exchange. Inferential statistics by use of multiple regression analysis was used to determine the relationship between financing cash flows and performance. The period of study was from 2007 to 2012 was used to collected secondary panel data. Performance was measured by net profit after tax was the dependent variable. Financing cash flows were the independent variables. The study shows that financing cash flows have a statistically significant positive influence on the Firm Performance.

Kadhim, Daikh and Seed (2022) examined the effect of operating activities on financial performance in Tehran Security Exchange. The study used descriptive research design and causal design. The also used systematic sampling approaches to calculate the sample size of 139 firms listed at Tehran stock exchange from 2014 to 2018. Secondary data was collected using annual report which was analyzed by F Lime test and regression analysis using excels and statistical packages. The study affirmed that there was statistically significant effect between earnings and operating cash flows. The study recognized that cash flows from operating activities affect profitability which has significant effect on performance.

Parsian (2018) studied the effect of operating cash flow on profitability in Tehran stock exchange. The study was conducted to relate the influence of different component of cash flows on profitability growth. The study was based on the following objectives which were; to investigate how depreciation expense affect profitability, to assess how increase in current liabilities affect profitability, and establish the effect of the decrease in current assets on profitability. The study used 42 firms sampled from Tehran stock exchange. The study adopted multiple regression models. The study found that different operating cash flow components affect profitability. The study failed to include correlation analysis to which was essential for determining the relationship between operating cash flows from Cash generated from operation and profits from operations on financial performance.

Agala (2017) examined the moderating role of firm characteristics on the relationship between investing free cash flows and financial performance of listed firms at the Nairobi securities exchange. The study sought to establish the moderating role of firm characteristics on the relationship between investing cash flows and financial performance. Specifically, the objectives of the were; to establish the effect of investing cash flows and financial performance of listed firms at the NSE, to determine the influence of firm characteristics on financial performance and cash flow investment size on financial performance. The study used secondary panel data which was obtained from 55 listed firms at the NSE for the period of 2006 to 2015. Regression analysis was used in data analysis. Findings indicate that in investing free cash flows has a significant positive effect on financial performance while firm characteristics have a negative effect. The study did not address cash flow invested which is the focus of this study.

METHODOLOGY

Research Design

The research design refers to the choices a researcher makes in establishing the research methodology, meaning the manner in which the research questions should be answered and how the data will be gathered (Collis & Hussey (2014). This study was adopt cross- sectional research design. According to Collis and Hussey (2014), a cross-sectional study is designed to obtain data over the same period of time but in different contexts.

Target Population

A population is described as the aggregate objects or subjects of the researchers concern which the researcher intents to generalize (Kothari, 2014). According to the Central Bank of Kenya, there are 38 commercial banks that were operating in the country as at December 2024. Hence all 38 licensed commercial banks formed the study's unit of analysis. The study utilized a Census technique since the population of interest is relatively small.

Sampling Frame

The sample frame has been defined by Mackinnon (2020) as a well-organized collection of sampling units being used in the research to outline and identify the population elements that took part in the research. The sampling frame for this study was all 38 commercial banks operating in Kenya.

Data Collection Methods

Data collection instruments are tools designed in such a manner that they obtain accurate data to address the research purpose (Creswell, 2014). Secondary data was collected on cash flow management and profitability of commercial banks by use of secondary data collection sheet.

Data Analysis and Presentation

The data collected was coded and analyzed using descriptive statistics and inferential statistics as data analysis techniques. The study generated both descriptive statistics and inferential statistics. Descriptive analysis on collected secondary data was done to give mean and standard deviation to be adopted as central tendency measures and measures of dispersions respectively. Inferential statistics involved regression analysis and correlation analysis (Creswell, 2014). Analyzed data was presented in frequency distribution tables so as to make it easy for research results description and explanation. The data analysis tool used in the study was Statistical Package for Social Sciences (SPSS version 29).

The study adopted panel regression model. The study used panel data to carry out the research analysis. This type of data measures how entities (i) behave across time (t). The panel data was subjected to Random effect model (REM) and Fixed effect model (FEM) for panel regression analysis as suggested by Gujarati (2012). The Hausman specification test was computed to determine which among the two models, Fixed effects model and Random effects model, to choose.

The general econometric model is defined as follows:

$$Y_{i,t} = \alpha + \beta_1 X_{1i,t} + \beta_2 X_{2i,t} + \beta_3 X_{3i,t} + \beta_4 X_{4i,t} + \varepsilon_{i,t} \dots\dots\dots 1$$

Where;

$Y_{i,t}$ represents the dependent variable i (ROA) at time t . i is the entity under observation with $i = 1 \dots 38$.

t is the time with $t = 2020 \dots 2024$.

$X_{1i,t}$ is the operating activities cash flow i at time t . $X_{2i,t}$ is the investing activities cash flow i at time t . $X_{3i,t}$ is the

financing activities cash flow i at time t . $X_{4i,t}$ represents the free cash flow i at time t .

α represents the constant term.

$\beta_1 \beta_2 \beta_3 \beta_4$ represent the coefficients of the independent variables.

$\varepsilon_{i,t}$ is the error term.

RESULTS AND DISCUSSION

Descriptive Statistics of the Variables

Summary statistics was done on the secondary data and the results are presented in Table 1.

Table 1: Descriptive Statistics

Construct	Mean	Std. Dev	Min	Max
Operating activities	0.682	0.272	0.041	0.997
Investing activities	0.048	0.211	-0.799	0.889
Financing activities	0.024	0.258	-0.577	0.941
Free cash flow	0.201	0.335	-0.627	0.943
ROA	8.763	11.522	-12.691	35.459
Obs	190	190	190	190

Descriptive results in Table 1 show that the average operating activities cash flow of commercial banks in Kenya is relatively strong at 0.682, with a standard deviation of 0.272. The narrow spread indicates moderate variability, meaning most banks consistently generated positive cash flows from their core operations. The minimum of 0.041 shows that a few banks struggled to generate operating cash, while the maximum of 0.997 suggests that some banks achieved near-optimal operational efficiency. This underscores the centrality of operating activities as the primary driver of banks' liquidity and financial performance.

Results on investing activities indicate a mean of 0.048, which is close to zero, with a relatively higher standard deviation of 0.211, reflecting wider variation across banks. The minimum of -0.799 shows that some banks experienced significant outflows, likely due to heavy investment in long-term assets or securities, while the maximum of 0.889 reflects cases where investment activities contributed positively to cash flows. This dispersion suggests that banks pursue diverse investment strategies, with some aggressively investing while others adopt more conservative approaches.

Financing activities recorded a low mean of 0.024, accompanied by a standard deviation of 0.258, indicating substantial variability. The minimum of -0.577 implies that some banks repaid more financing obligations than they raised, while the maximum of 0.941 suggests that others relied heavily on financing sources. This highlights differences in funding structures, with certain banks depending on external borrowing or equity while others relied more on retained earnings and deposits.

Free cash flow results revealed a mean of 0.201 and a standard deviation of 0.335, showing moderate variability. The minimum of -0.627 reflects banks with negative free cash flow, potentially due to high capital expenditures or aggressive reinvestment strategies, whereas the maximum of 0.943 indicates banks with healthy excess cash after meeting obligations. These differences imply that while many banks were able to generate positive free cash flows, others struggled with liquidity pressures.

Finally, the profitability indicator (ROA) shows an average of 8.763, but with a high standard deviation of 11.522, suggesting wide disparities across banks. The minimum of -12.691 highlights that some banks

made significant losses, possibly due to rising credit defaults or operational inefficiencies, while the maximum of 35.459 reflects highly profitable institutions. The wide dispersion underscores the uneven financial performance of Kenyan commercial banks during 2020 – 2024.

Correlation Results

Correlation analysis was done to determine the correlation between cash flow activities and profitability of commercial banks in Kenya using the Pearson's product moment correlation analysis. The results are shown in Table 2.

Table 2: Correlation Results

		Operating activities cash flow	Investing activities cash flow	Financing activities cash flow	Free Cash flow	ROA
Operating activities cash flow	Pearson Correlation	1				
	Sig. (2- tailed)					
	N	190				
Investing activities cash flow	Pearson Correlation	-.215	1			
	Sig. (2- tailed)	.021				
	N	190	190			
Financing activities cash flow	Pearson Correlation	-.142	.276	1		
	Sig. (2- tailed)	.063	.010			
	N	190	190	190		
Free cash flow	Pearson Correlation	.384	-.231	.165	1	
	Sig. (2- tailed)	.000	.017	.048		
	N	190	190	190	190	
ROA	Pearson Correlation	.642*	-.402	.309	.523	1
	Sig. (2- tailed)	.000	.000	.001	.000	
	N	190	190	190	190	190

*. Correlation is significant at the 0.05 level (2-tailed).

Results from the correlation analysis in Table 2 indicate that the four cash flow activities were significantly associated with the profitability (ROA) of commercial banks in Kenya. Specifically, operating activities cash flow exhibited the strongest positive and significant correlation with profitability ($r = 0.642$, $p = 0.000$), implying that banks generating higher cash inflows from core operations tend to achieve superior returns. This finding underscores the importance of efficient management of interest income, fees, and commissions in enhancing bank profitability.

Conversely, investing activities cash flow showed a negative and significant relationship with profitability ($r = -0.402$, $p = 0.000$), suggesting that substantial investment outflows— such as purchases of securities or property—may reduce short-term returns among banks. This outcome aligns with the view that heavy capital investments can constrain immediate liquidity and profitability.

Financing activities cash flow was positively and significantly correlated with profitability ($r = 0.309$, $p = 0.001$), indicating that prudent management of financing activities, such as borrowing, capital injections, and dividend payments, can strengthen financial performance. Similarly, free cash flow exhibited a strong positive and significant relationship with profitability ($r = 0.523$, $p = 0.000$), implying that banks with higher discretionary cash after investments tend to perform better due to improved flexibility and liquidity management. These findings are consistent with empirical results by Soet (2020), Musau and Muturi (2022), and Juma and Otieno (2023), who observed that efficient cash flow management plays a critical role in enhancing the profitability of commercial banks in Kenya.

Linear Multiple Regression Results

A regression model was adopted in this study to establish the statistical relationship between cash flow activities and the profitability of commercial banks in Kenya. This analysis aimed to determine the extent to which variations in cash flow activities explain differences in bank performance, measured by return on assets (ROA). The regression results provide insights into the relative contribution of each cash flow component and the overall predictive power of the model, complementing the preceding correlation analysis.

Table 3: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.749 ^a	.561	.553	.41273

a. Predictors: (Constant), Investing activities cash flow, Financing activities cash flow, Free cash flow, Operating activities cash flow

b. Dependent Variable: Return on Assets

The results in the model summary showed that the multiple correlation coefficient (R) was 0.749, indicating a strong positive relationship between the combined cash flow activities (operating, investing, financing, and free cash flows) and the profitability of commercial banks in Kenya. The coefficient of determination (R^2) was 0.561, implying that approximately 56.1% of the variation in profitability (ROA) among commercial banks can be explained by the joint effect of the four cash flow components. This demonstrates that the model possesses substantial explanatory power, suggesting that effective management of cash flow activities significantly influences bank profitability. The remaining 43.9% of the variation in profitability is attributed to other factors not captured in this model which may also affect the financial performance of banks. These findings are consistent with Soet (2020) and Musau and Muturi (2022), who similarly observed that while cash flow activities are strong predictors of financial performance, other internal and external determinants equally contribute to profitability differences among commercial banks in Kenya.

Table 4: ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	34.857	4	8.714	59.279	.000 ^b
	Residual	27.243	185	.147		
	Total	62.090	189			

a. Dependent Variable: Return on Assets

b. Predictors: (Constant), Investing activities cash flow, Financing activities cash flow, Free cash flow, Operating activities cash flow

Results from Table 4 show that the regression model was statistically significant in predicting the profitability of commercial banks in Kenya. The F-statistic was 59.279 with a significance level of $p <$

0.001, indicating that the combined effect of the four cash flow activities—operating, investing, financing, and free cash flow—significantly explains variations in the banks’ profitability (ROA). This means that the overall model provides a good fit to the data and that changes in cash flow activities have a meaningful influence on the financial performance of commercial banks.

The findings imply that effective management of operational, investment, and financing cash flows, as well as the maintenance of healthy free cash flow, are essential for sustaining profitability in the banking sector. This result aligns with previous studies by Soet (2020) and Juma and Otieno (2023), who found that cash flow management practices play a vital role in enhancing financial performance among commercial banks in Kenya.

Table 5: Regression Coefficients

Model	Unstandardized Coefficients		Standardized Coefficients		t	Sig.
	B	Std. Error	Beta			
1 (Constant)	.814	.142			5.732	.000
Operating activities	.458	.071	.492		6.451	.000
Investing activities	-.237	.082	-.254		-2.890	.004
Financing activities	.161	.064	.178		2.516	.013
Free cash flow	.276	.078	.291		3.538	.001

a. Dependent Variable: Return on Assets

The derived regression coefficients of the model are:

$$ROA = .814 + .458X_1 - .237X_2 + .161X_3 + .276X_4$$

The regression results showed that all the independent variables had significance values less than 0.05, implying that they all made statistically significant contributions to the profitability of commercial banks in Kenya. The constant term ($\beta = 0.814$, $p < 0.05$) indicates that when all the cash flow activities are held constant, the profitability of commercial banks, measured by return on assets (ROA), would stand at 0.814 units. Further, the results revealed that a unit change in operating activities cash flow leads to an average 0.458 unit increase in ROA, holding other variables constant. A unit increase in investing activities cash flow results in a 0.237 unit decrease in ROA ($\beta = -0.237$, $p = 0.004$), implying that high investment outflows negatively affect short-term profitability. Similarly, a unit change in financing activities cash flow leads to a 0.161 unit increase in ROA ($p = 0.013$). Finally, a unit change in free cash flow yields a 0.276 unit increase in ROA ($p = 0.001$).

Based on the standardized beta coefficients, operating activities cash flow ($\beta = 0.492$) had the strongest effect on profitability, followed by free cash flow ($\beta = 0.291$) and financing activities cash flow ($\beta = 0.178$), while investing activities cash flow ($\beta = -0.254$) had a significant but negative effect.

Discussion of Key Findings

The first objective of the study sought to establish the effect of operating activities cash flow on the profitability of commercial banks in Kenya. Regression analysis revealed that operating activities cash flow had a positive and significant effect on profitability ($\beta = 0.458$, $p < 0.05$). Thus, the null hypothesis was rejected and the alternative hypothesis accepted. These results are consistent with Soet (2020), who emphasized that efficient cash generation from core banking operations is a critical driver of bank profitability, enabling banks to sustain returns and maintain operational efficiency.

The second objective was to determine the effect of investing activities cash flow on the profitability of commercial banks. Regression results indicated that investing activities cash flow had a negative and significant effect on profitability ($\beta = -0.237$, $p < 0.05$). The null hypothesis was therefore rejected in favor

of the alternative. These findings align with Gachanja and Njoroge (2021), who found that higher investment outflows, such as spending on securities or fixed assets, may reduce short-term returns among banks due to liquidity constraints.

The third objective of the study sought to determine the effect of financing activities cash flow on profitability. The regression results established that financing activities cash flow was positively and significantly associated with profitability ($\beta = 0.161$, $p < 0.05$). Accordingly, the null hypothesis was rejected and the alternative hypothesis accepted. These results are in agreement with Juma and Otieno (2023), who noted that prudent financing practices, including effective borrowing and capital management, contribute positively to financial performance in commercial banks.

The fourth objective was to find out the effect of free cash flow on the profitability of commercial banks. Regression analysis indicated that free cash flow had a positive and significant effect on profitability ($\beta = 0.276$, $p < 0.05$). Thus, the null hypothesis was rejected and the alternative hypothesis accepted. This finding concurs with Musau and Muturi (2022), who argued that maintaining higher discretionary cash after investments enhances liquidity and provides banks with the flexibility to reinvest, meet obligations, and improve overall profitability.

CONCLUSIONS AND RECOMMENDATIONS

The general objective of the study was to determine the effect of cash flow activities on the profitability of commercial banks in Kenya. The presentation of findings was structured into four key subsections: the results of the pilot study, analysis of banks' financial and operational characteristics, descriptive analysis of the cash flow variables (operating, investing, financing, and free cash flow), and inferential statistics covering correlation and regression analysis.

Descriptive statistics revealed that commercial banks in Kenya maintain robust routines for generating cash from their core operations, as reflected by a mean operating activities cash flow of 0.682 with a standard deviation of 0.272. The minimum and maximum values ranged from 0.041 to 0.997, indicating variability across banks in operational cash generation. These results suggest that most banks are efficient in collecting interest, fees, and other operational income, which contributes to their ability to sustain profitability. Inferential statistics further established that operating activities cash flow was positively and significantly correlated with ROA. Regression analysis confirmed that operating activities cash flow had the strongest positive and significant effect on bank profitability.

Descriptive statistics showed that commercial banks in Kenya reported relatively low investing activities cash flows, with a mean of 0.048 and a standard deviation of 0.211. Values ranged from -0.799 to 0.889, reflecting differences in investment strategies, such as acquisitions of securities, property, or other assets. The results indicate that while some banks generate returns from investments, others experience outflows that may temporarily constrain liquidity. Inferential statistics established a negative and significant correlation between investing activities cash flow and ROA, and regression analysis confirmed that investing activities cash flow had a significant but negative effect on bank profitability.

The descriptive results for financing activities cash flow showed a mean of 0.024 with a standard deviation of 0.258, and a range from -0.577 to 0.941. These figures suggest variability in how banks manage debt, capital injections, and dividend payments. Some banks actively mobilize funds or repay liabilities, while others show net outflows from financing activities. Inferential statistics indicated a positive and significant correlation with ROA, and regression analysis confirmed that financing activities cash flow had a positive and significant effect on profitability.

Descriptive statistics revealed that commercial banks had a mean free cash flow of 0.201, with a standard deviation of 0.335, and values ranging from -0.627 to 0.943. This indicates variability in the discretionary

cash available after operational and investing activities. Banks with higher free cash flow are better positioned to reinvest, meet obligations, and improve profitability. Inferential statistics further established that free cash flow was positively and significantly correlated with ROA. Regression analysis confirmed that free cash flow had a positive and significant effect on bank profitability.

The study concluded that operating activities cash flow has a significant effect on the profitability of commercial banks in Kenya. It is concluded that banks have developed effective routines to efficiently generate cash from their core operations, including interest income, fees, and commissions, which enhances their ability to sustain returns and maintain financial stability. These practices enable banks to optimize operational efficiency and strengthen overall profitability.

The study also concludes that investing activities cash flow has a significant but negative effect on profitability, indicating that while investments in securities, property, and other assets may create long-term value, they can reduce short-term returns and constrain liquidity if not managed prudently.

Furthermore, financing activities cash flow was found to have a positive and significant effect on profitability, suggesting that banks that effectively manage debt, capital injections, and dividend payments can improve their financial performance.

Finally, the study concludes that free cash flow has a positive and significant effect on profitability, demonstrating that banks with higher discretionary cash after operational and investing activities are better positioned to reinvest, meet financial obligations, and enhance returns.

Based on the findings of this study, it is recommended that commercial banks in Kenya should strengthen their operating activities cash flow by improving processes that enhance the collection of interest, fees, and other operational income. Banks should adopt efficient operational systems and monitoring mechanisms to ensure consistent and timely cash generation, thereby sustaining profitability.

Banks should also strategically manage investing activities cash flow by carefully planning investments in securities, property, and other assets to avoid unnecessary liquidity constraints. A balance between short-term liquidity needs and long-term investment objectives should be maintained to minimize negative impacts on profitability.

Furthermore, it is recommended that banks optimize financing activities cash flow by effectively managing borrowing, capital injections, and dividend policies. Prudent financing strategies can improve profitability while maintaining financial stability and mitigating risk.

Finally, commercial banks should maintain and monitor free cash flow to ensure that sufficient discretionary cash is available after operational and investment commitments. This will enable banks to reinvest in profitable opportunities, meet obligations, and respond to unexpected financial challenges, thereby enhancing overall profitability.

Areas for Further Research

The scope of this study was limited to cash flow activities; operating, investing, financing, and free cash flows and their effect on the profitability of commercial banks in Kenya. These constructs explained 56.1% of the variation in profitability. Future studies should therefore explore other financial and operational factors not considered in the current study, such as capital adequacy, credit risk management, liquidity ratios, and technological investment, to determine their contribution to bank performance. In addition, this study was confined to commercial banks operating in Kenya. Future research could extend the scope to other financial institutions, such as microfinance institutions, savings and credit cooperatives (SACCOs), or insurance companies, to establish whether similar relationships hold across the broader financial sector.

Finally, future research could adopt longitudinal designs to capture the long-term impact of cash flow management on profitability, as this study employed a cross-sectional approach. This would provide insights into how cash flow strategies affect financial performance over time, particularly during periods of economic volatility or regulatory changes.

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