MASTER'S THESIS

ANTI-MONEY LAUNDERING PRACTICES AND OPERATIONAL EFFICIENCY IN THE KENYAN BANKING INDUSTRY: A CASE OF COMMERCIAL BANKS IN NAIROBI COUNTY

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Master's Thesis Submitted in Partial Fulfilment of the Requirements for the Award of the Master of Business Administration (Finance & Investment) at the Open University of Kenya.

OPEN UNIVERSITY OF KENYA

NOVEMBER 2026

DECLARATION

I declare that this research project my own original work and has not been submitted to any other institution or examination body for academic credit. All sources of information, data, and literature used in this study have been duly acknowledged and cited.

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ABSTRACT

Anti-money laundering (AML) practices are essential to safeguarding the integrity of financial systems. Commercial banks play a central role in implementing these practices because they process substantial volumes of financial transactions. However, customer verification, transaction monitoring, suspicious transaction reporting and staff training require financial, technological and human resources and may affect the efficiency of banking operations. This study examined the relationship between AML practices and the operational efficiency of commercial banks in Nairobi County, Kenya. Specifically, the study examined the effect of customer due diligence (CDD) systems, transaction monitoring systems, transaction reporting systems, and regular AML staff training on operational efficiency. An explanatory research design grounded in a pragmatic philosophy was adopted. Primary data was collected using structured questionnaires targeting 190 respondents across commercial banks in Nairobi County, with a pilot study conducted in Kitengela town, Kajiado County. Descriptive statistics, bivariate linear regression, and multivariate linear regression analyses were conducted. The bivariate regression results indicated that CDD has a significant negative effect on operational efficiency (beta = -0.487, $R^2 = 0.232$, $F(1,46) = 13.924$, $p < 0.05$), whereas transaction monitoring systems (beta = 0.802, $R^2 = 0.145$, $F(1,41) = 22.516$, $p < 0.05$), transaction reporting systems (beta = 0.485, $R^2 = 0.108$, $F(1,42) = 35.117$, $p < 0.05$), and regular staff training (beta = 1.641, $R^2 = 0.129$, $F(1,46) = 44.383$, $p < 0.05$) all exert positive and statistically significant effects. The multivariate linear regression established an overall model fit of $R^2 = 0.299$, $F(4,43) = 67.146$, $p < 0.05$, with joint coefficients of beta = -0.826 for CDD, beta = 0.494 for monitoring systems, beta = 0.214 for reporting systems, and beta = 0.353 for staff training. The study concluded that while automated monitoring, reporting, and staff training enhance operational efficiency, intensive CDD procedures create administrative bottlenecks that constrain efficiency. Recommendations include streamlining KYC and CDD onboarding workflows and investing in integrated compliance automation. Given that the model explains 29.9% of the variance in operational efficiency, future research should explore the remaining 70.1% of explanatory factors. The study is intended to provide context-specific evidence on how AML practices relate to operational efficiency in commercial banks operating in Nairobi County and to inform bank management and regulatory practice as well as Future Scholars.

ACKNOWLEDGEMENT

I wish to express my heartfelt gratitude to my supervisor, Dr. Robert Odunga, for his exceptional guidance, patience, and invaluable insights throughout the preparation of this project. I am also deeply grateful to my colleagues at Equity Bank (K) Ltd and my friends for their constant encouragement and constructive feedback.

Above all, I extend my deepest appreciation to my family, whose unwavering prayers, unconditional love, and support sustained me throughout this academic journey.

DEDICATION

This research project is dedicated to my family for their profound care, encouragement, and moral support throughout my academic journey. I also extend this dedication to my colleagues in recognition of the unwavering support they provided during the drafting and completion of this work.

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ACRONYMS

AML	Anti-Money Laundering
ATR	Asset Turnover Ratio
CBK	Central Bank of Kenya
CBN	Central Bank of Nigeria
CDD	Customer Due Diligence
CIR	cost-to-income ratio
ESAAMLG	Eastern and Southern Africa Anti-Money Laundering Group
FATF	Financial Action Task Force
FRC	Financial Reporting Centre
FIU	Financial Intelligence Unit
FSD	Financial Sector Development
GDP	Gross Domestic Product
GMM	Generalized Method of Moments
IMF	International Monetary Fund
KYC	Know Your Customer
MLTF	Money Laundering/ Terrorism Financing
MLRO	Money Laundering Reporting Officers
OIR	Operating Expense Ratio
POCAMLA	Proceeds of Crime and Anti-Money Laundering Act
ROA	Return on Assets
SAR	Suspicious Activity Report
SGMM	System Generalized Method of Moments
STR	Suspicious Transaction Report
SUR	Seemingly Unrelated Regression

TERMS AND DEFINITIONS

Anti-Money Laundering (AML): Statutory regulations and institutional protocols designed to identify, prevent, detect, report, and disrupt efforts to disguise illicit financial proceeds as legitimate funds.

Operational Efficiency: A bank's ability to deploy people, technology, money, and time to achieve intended outcomes while minimizing costs, wastage, and delays, measured through operational cost efficiency, transaction processing efficiency, customer service efficiency, and risk management effectiveness.

Customer Due Diligence (CDD): Compliance procedures covering identity verification, customer risk assessment, tracking sources of funds, and ongoing monitoring of customer behaviour.

Know Your Customer (KYC): Processes used to authenticate customer identities, assess enterprise links, and maintain accurate client documentation.

Transaction Monitoring Systems: Automated tools and analytics that screen transactions in real time, flag unusual or unauthorized activity, and deliver immediate prompts/alerts to customers and staff.

Transaction Reporting Systems: Standardized platforms and workflows for preparing, validating, and submitting Suspicious Transaction Reports (STRs) to regulatory authorities accurately and promptly.

AML Staff Training: Regular, practical, and competence-evaluated training that keeps bank personnel updated on AML laws, emerging risks, alert investigation, and reporting procedures.

Compliance Theory: Explains how organizations adhere to statutory mandates to avoid sanctions and maintain legitimacy, showing that operational efficiency improves only when rules are embedded into automated, streamlined workflows rather than rigid manual checklists.

Agency Theory: Examines information asymmetry and conflicts of interest between principals (shareholders/regulators) and agents (managers/staff), demonstrating how automated AML controls reduce oversight friction and agency costs.

Pragmatism: A research philosophy focused on using practical methods to generate actionable solutions for real-world operational challenges.

Explanatory Research Design: A cross-sectional survey approach designed to establish cause-and-effect relationships between AML practices and operational efficiency.

Census & Purposive Sampling: Surveying all 38 licensed commercial banks in Nairobi County (a census) while deliberately selecting respondents across five AML-linked roles (compliance officers, risk managers, internal auditors, finance officers, and branch managers).

CHAPTER ONE
INTRODUCTION

1.1. Background of Study

Money laundering is highly ranked among key challenges affecting integrity and stability of the global financial system according to a report by Nazzari & Reuter (2025). The laundering processes involve concealing, disguising, or changing the look of financial fortunes from illegal activities to look like legitimately-acquired money. Through this process, criminals use, transfer, or invest illicit activity proceeds without attracting law enforcement agency attention. The activity is closely linked to crimes like corruption, drug and human trafficking, bribery, extortion, theft, piracy, counterfeiting, tax evasion, poaching, kidnapping, smuggling, commodity trafficking, and other organized crimes (AlQudah, Hailat & Setabouha, 2025).

Failure to mitigate money laundering erodes legitimate businesses, makes governments miss their revenue targets, weakens the domestic financial institutions, fosters organized crime, and eventually undermines public confidence and the rule of law. According to Andni, R. (2025), various governments and international organizations have strengthened Anti-Money Laundering (AML) frameworks to address these challenges. Financial Action Task Force (FATF), was created in 1989 to formulate international benchmarks designed to suppress financial crimes and block the funding pipelines of terrorist groups to (Financial Action Task Force [FATF], 2019). The compliance architecture designed by FATF mandates strict guidelines for verifying client identities, tracking transactions, audit trail as well as flagging questionable financial activities to regulatory bodies.

One of the most noteworthy developments in global AML regulation, as proposed by FATF, is the shift from rule-based approaches towards risk-based approaches, according to Balina et al. (2025). These new approaches require financial institutions to concentrate resources on customers, products, transactions, and jurisdictions presenting higher money laundering risks. The other requirement for FATF is that financial institutions must execute Know-Your-Customer (KYC) procedures prudently, authenticate customer identities, co-opt enterprise links comprehensively, and uphold appropriate transaction documentation. The current proliferation of advanced technology had exerted enormous force in the transformed AML practices (Le Nguyen, 2018). Today's AML frameworks encompasses deployment of advanced data analytics and intelligent

machine learning tools as well as automated transaction-monitoring systems in enhancing AML practices. However, from Goldbarsht and Sheedy (2024), these technologies also have their unique challenges, which also evolve as the money transfer technologies keep changing. The most profound examples are mobile payments, digital banking, cryptocurrencies, and cross-border transactions. These technologies are popular for enhancing seamless transactions simultaneously with new opportunities for criminals to move money from one and point to another and concealing their origins, complicating AML dependence on technological capacity, regulatory supervision, institutional competence, and effective enforcement.

In Africa, money laundering is persistent because of the proliferating corruption, tax evasion, illegal resource exploitation, smuggling, organized crime, and growing cross-border financial activities (Kohnert, 2024). In response, member countries have established mechanisms to address the challenge. Member Countries like Kenya, Tanzania, Rwanda and Uganda are currently being supported by ESAAMLG in strengthening AML and counter-terrorism financing frameworks through mutual evaluations, technical assistance, and regional cooperation. Nevertheless, implementation of ESAAMLG guidelines remains uneven due to limited institutional capacity, informal financial systems, intensive cash-based businesses, inadequate resources, and differences in regulatory and enforcement capabilities (Tuhirirwe & Alexander, 2025). The rapid mobile money and digital financial service expansion has enhanced the level of financial inclusion, especially in the global south. At the same time, it has also amplified the complexity of AML procedure execution, especially customer identity authentication and transaction monitoring.

In Kenya, money laundering remains a remarkable challenge, considering the country's rising position as East Africa's commercial and financial and commercial hub. In the last two decades, Kenya has been one of the global destinations with the highest rate of expansion of commercial banking sector, cross-border trade, and the swift digital financial service adoption (Ngari, 2023). These dynamics have made it a target of money laundering. The law also enacted provisions on institutional responsibilities among key AML regulatory bodies. One of these is the Financial Reporting Centre (FRC) which is tasked with receiving, analyzing, and disseminating financial intelligence concerning money transactions that look suspicious and related financial crimes. According to Tuhirirwe & Alexander (2025), the Central Bank of Kenya (CBK) is mandated to oversee AML compliance in the commercial banking sector The enactment of FATF has seen a remarkable increase in transaction scrutiny to curb money laundering. However, Gikonyo (2023)

suggests that this space remains vulnerable to the broadening of the digital financial services, and increased transaction volumes, which raise additional challenges for monitoring transactions and detecting suspicious financial activities.

Kenya has put adequate regulatory and institutional mechanisms, achieving effective AML implementation is a critical challenge in Kenya (Ngari, 2023). Current evidence shows that having legislation in place, fails to guarantee effective detection, investigation, prosecution, and recovery of money laundering proceeds. Financial institutions also face increasing compliance costs associated with technology, employee training, customer verification, transaction monitoring, and regulatory reporting, creating a gap between formal AML requirements and their practical implementation. Empirical research is indeed necessary to examine the influence of AML practices within financial institutions in Kenya, on how AML activities influence the operations of these institutions. Understanding these factors is pivotal for strengthening AML enforcement, protecting the integrity of financial institutions in Kenya, as well as reducing institutional and economic consequences linked to financial crimes.

1.1.1. The Concept of Anti-Money Laundering (AML) Initiatives

Anti-Money Laundering (AML) compliance structures comprise the statutory regulations, and institutional protocols, are put in place by relevant stakeholders to prevent criminals from masking the illegitimacy of the proceeds of illegal activities Gichuki (2025). From a broad perspective, AML involves the procedures of identification, prevention, detection, reporting, investigation, and disruption of activities leading to the introduction, movement, or integration of illicit money into the legitimate economy. AML targets financial crimes like corruption, fraud, drug trafficking, human trafficking, bribery, tax evasion, and terrorism financing Azinge-Egbiri, N. V. (2022). At the general level, AML encapsulates the coordinated effort by governments, regulators, financial institutions, law enforcement agencies, and other stakeholders to prevent criminals from gaining financially from crime proceeds and, consequently, safeguard the financial system integrity.

Since financial institutions are key stakeholders in AML procedures, they are expected to establish systems that enable them to identify unusual or suspicious financial behavior and take appropriate action (Gichuki, 2023). This includes creating and executing a framework of controls and practices to identify and manage the financial service loopholes that are prone to exploitation by notorious money launderers. Le Nguyen (2018) indicated that Customer due diligence, verification of

customer identities, Know Your Customer (KYC) procedures, identification of ultimate beneficial ownership, transaction monitoring, risk assessment, record keeping, employee training, internal controls, and reporting of suspicious transactions to relevant authorities are common measures recommended by the regulator. Effective AML systems enable financial institutions to reduce exposure to financial crime, regulatory sanctions, reputational damage, and operational losses.

Due to processing of huge volume of financial transactions, including deposits, cash withdrawals, funds transfers, foreign currency exchange and international remittances, commercial banks are highly vulnerable to illicit financial flows. Furthermore, the 2022 Mutual Evaluation conducted by ESAAMLG highlighted that Kenya faced major shortcomings regarding Financial Action Task Force (FATF) principles. Specifically, Kenya complied fully with two FATF recommendations and violated the rest, wholly or partially (Morris, De Koker & Nel, 2026). The regulatory audit insisted that the jurisdiction shows deficient performance across nine of eleven standard evaluation metrics. Further evidence indicates that commercial banks accounted for more than 91% of suspicious transaction reports received across reporting sectors 0over that period (Terer, 2025). Due to this, considerable responsibility lies on banks to implement comprehensive AML controls, including customer identification and verification, customer risk profiling, persistent monitoring of transactions, enhanced due meticulousness in dealing with high-risk customers, suspicious transaction reporting, staff training, and internal compliance reviews (Le Nguyen, 2018). As part of the efforts to strengthen these controls, commercial banks progressively adopt automated transactions tracking systems alongside, data analytics and artificial intelligence to detect unusual transaction patterns and flag potentially suspicious activities for further investigation.

1.1.2. Operational Efficiency in Commercial Banks

Operational efficiency describes an organization's ability to deploy resources, including people, technology, money, and time, to achieve intended outcomes while minimizing wastage, costs, and delays (Limon, 2023). This efficiency is reflected in the organization's capacity to streamline workflows, eliminate redundant activities, control operating expenses, and enhance productivity. Being operationally efficient translates to quick and smooth objective attainment and maintenance of appropriate balance between the quality, quantity, and cost of its operations (Kaydos,2020).

Operational efficiency serves as a critical tool in competitive environments because delivering products and services faster, at lower costs, and with consistent quality that rivals positions the organization to improve profitability and maintain competitive advantage. The main indicators of operational efficiency are indicators operating costs, productivity, processing time, resource utilization, service quality, and the ratio between inputs and outputs.

Commercial banks undertake numerous activities, including accepting deposits, processing payments, providing loans, conducting foreign exchange transactions, managing customer accounts, and monitoring financial transactions (Terer, 2025). From the commercial banks' perspective, operational efficiency represents the ability to provide banking services effectively while minimizing the resources and costs required to conduct banking operations. The efficiency of these institutions therefore depends on workers', branches, technology, financial resources, and internal processes management. Key metrics for measuring how efficiently a commercial bank operates includes its Cost Income Ratio, operating expense ratio, transactions speed, staff productivity, and level of workflow automation (Bueno et al., 2026). Cost Income Ratio that is lower typically shows that a bank generates its income at relatively lower operating costs and vice versa.

1.1.3. Anti-money Laundering and Operational Efficiency Link

Anti-Money Laundering (AML) and operational efficiency financial institutions have a close link. Oliveira and Leal (2024) show that AML requires financial institutions to establish mechanisms for identity verification, client due diligence, transaction tracking, record-keeping, suspicious activity reporting, and internal compliance. Although these measures are primarily intended to identify and deter financial crimes, AML implementation has direct implications for the efficiency of banking operations. That is to say, the effectiveness of AML systems may influence how efficiently banks utilize their human, technological, and financial resources.

Tobias and Amoako (2025) indicate that well-designed AML procedures can improve efficiency by standardizing and automating activities that would otherwise require extensive manual intervention. For commercial banks, the relationship is particularly important because banks process large volumes of transactions while operating under strict regulatory requirements. Chau and van Dijck Nemcsik (2020) contend that effective AML systems can strengthen operational efficiency by improving internal processes, reducing financial crime-related losses, and enabling

banks to manage risks more systematically. As an illustration, customer due diligence and transaction monitoring systems, utilize automated processes to verify customer information, screen transactions, identify unusual patterns, and generate alerts for further investigation. Automation reduces the amount of time employees spend on routine compliance activities, allowing banks to focus on higher-risk cases and other productive activities.

At the same time, Khaing (2025) shows that customer information and transaction data integration can reduce duplication, improve information accessibility, and enhance the accuracy and timeliness of compliance decisions, making effective AML systems execution contribute to faster processing, better resource allocation, and improved productivity. AML can also improve operational efficiency through effective risk management by distinguishing between low-, medium-, and high-risk customers and transactions and allocating compliance resources according to the level of risk. Rather than applying the same level of scrutiny to every customer, banks can concentrate their human and technological resources on activities that present greater money-laundering risks, reducing unnecessary compliance activities, improving the prioritization of investigations, and enhancing quick responses to significant risks.

Nevertheless, AML requirements can also create operational challenges when systems and processes are poorly designed (Ringgaard, Bukh & Sandalgaard, 2025). Extensive customer verification requirements, repeated documentation, manual transaction reviews, and large volumes of transaction alerts can increase operating costs and processing times. When security systems trigger too many false alarms, compliance teams end up chasing ghosts. Staff spend hours looking into perfectly normal transactions, which consumes valuable time and budgets. On top of that, bulky, disconnected systems create a bottleneck of duplicated work, leaving new customers waiting forever just to open an account or transfer their money.

1.2. Problem Statement

Globally, the stability and operational performance of financial systems are heavily threatened by illicit money laundering operations. As primary financial intermediaries, commercial banks face heightened exposure to money laundering risks due to the massive daily volumes of deposits, wire transfers, payments, loans, foreign exchange, and digital transactions they process. To mitigate these threats, banks adopt Anti-Money Laundering (AML) practices, including rigorous client identity verification, continuous transaction tracking, suspicious activity reporting, record-

keeping, and internal enforcement procedures. While essential for safeguarding financial integrity, these compliance measures introduce additional operational security layers that require substantial financial, technological, and human resource investments. When institutions rely on costly, manual, or poorly integrated AML workflows alongside automated monitoring tools that generate excessive false-positive alerts, they risk inflating operating expenses, delaying transaction processing, increasing employee workloads, and diverting resources away from core revenue-generating banking activities.

In the Kenyan context, the operational pressure of executing robust AML controls has intensified alongside the rapid expansion of mobile money, digital banking, electronic payments, and cross-border financial flows. Under the Proceeds of Crime and Anti-Money Laundering Act (POCAMLA), the Financial Reporting Centre (FRC) requires reporting institutions to detect and report suspicious transactions, positioning commercial banks at the forefront of national AML enforcement. Data from the FRC's 2024 report indicates that commercial banks account for more than 91% of all suspicious transaction reports submitted across reporting sectors, underscoring their heavy compliance burden. Simultaneously, mutual evaluations by the Eastern and Southern Africa Anti-Money Laundering Group (ESAAMLG) have identified persistent deficiencies in Kenya's technical compliance and overall effectiveness against Financial Action Task Force (FATF) benchmarks, prompting stricter regulatory scrutiny and the 2023 POCAMLA legislative reforms.

Despite this heightened regulatory environment, a significant empirical, methodological, and contextual gap persists in existing scholarship regarding the operational consequences of AML compliance in Kenya. Contextually and empirically, prior studies have largely focused on macro-level AML legal frameworks, financial crime trends, or broad financial performance metrics such as profitability, leaving limited empirical evidence on how specific AML practices affect day-to-day operational efficiency of commercial banks within Nairobi County, where all 38 licensed commercial banks maintain their headquarters. Methodologically, much of the existing regional and local literature has relied exclusively on secondary financial statements, failing to capture the firsthand operational experiences of compliance, risk, audit, finance, and branch personnel who manage AML workflows daily. To address these gaps, this study isolates and evaluates how four core AML practices, customer due diligence, transaction monitoring systems, transaction reporting

systems, and staff training, influence the operational efficiency of commercial banks in Nairobi County.

1.3. Study Objectives

1.3.1. General Objective

The primary aim of this study is to evaluate influence of Anti-Money Laundering (AML) practices on the operational efficiency of commercial banking institutions operating within Nairobi County, Kenya.

1.3.2. Specific Objectives

i. To examine the relationship between customer due diligence (CDD) systems and the operational efficiency of commercial banks in Nairobi County.

ii. To evaluate the effect of deploying AML reporting systems on the operational efficiency of commercial banks operating within Nairobi County.

iii. To assess how AML transaction monitoring systems influence the operational efficiency of commercial banks in Nairobi County.

iv. To analyze the influence of AML staff training on the operational efficiency of commercial banking institutions operating in Nairobi County.

1.4. Research Hypotheses

The following null hypotheses were tested;

H_{01}: Continuous utilization of customer due diligence systems does not yield statistically significant effect on operational efficiency of commercial banks in Nairobi County, Kenya.

H_{02}: The execution of AML reporting systems exhibits no statistically significant effect on operational efficiency of commercial banks in Nairobi County, Kenya.

H_{03}: Adoption of AML transaction monitoring systems have no statistically significant influence on operational efficiency of commercial banks in Nairobi County, Kenya.

H_{04}: There is no statistically significant influence of AML staff training on the operational efficiency of commercial banks in Nairobi County, Kenya.

1.5. Significance of the Study

The empirical conclusions derived from this research could offer vital perspectives for diverse stakeholders in the commercial banking industry, including bankers, banking managers, policymakers and regulators in Kenya.

By looking at these insights, commercial banks can find ways to sharpen their customer checks, transaction monitoring, and reporting systems. This allows them to stop financial crime effectively without incurring unnecessary costs or keeping customers waiting.

The CBK, can leverage this research to strengthen supervision as well as regulation of AML practices within the banking sector by providing evidence on gaps in AML implementation and aiding the formulation of more effective supervisory guidelines and compliance frameworks.

The study may enhance Bank employees' & Managers' understanding on how AML procedures affect operational processes, informing decisions concerning staff training, technology adoption, workload management, and the design of efficient compliance procedures.

For researchers and academicians, this study may provide empirical evidence for AML practices and their impacts on financial crime, banking operations, risk management, and operational efficiency, thereby expanding theoretical insights regarding how regulatory conformity interacts with bank operational performance.

The policymakers across Kenya and throughout the developing world can utilize this data to formulate or improve policies and legislation aimed at combating money laundering, including those that strengthen institutional coordination, AML enforcement mechanisms, and national AML strategies.

1.6 Scope of the Study

Geographically, this investigation is confined strictly to Nairobi County, which serves as Kenya's principal financial and commercial hub and hosts the corporate headquarters and primary operational centers of all 38 licensed commercial banks. Focusing on Nairobi County ensures comprehensive access to centralized compliance units, executive risk committees, and core banking operations where AML policies are designed and enforced. Temporally, the study covers the three-year post-reform period following the enactment of the Proceeds of Crime and Anti-Money Laundering Act (POCAMLA) amendments of 2023, ensuring that the findings reflect the prevailing regulatory regime and contemporary compliance demands. Conceptually, the study

evaluates four independent AML dimensions; customer due diligence (CDD) systems, transaction monitoring systems, transaction reporting systems, and AML staff training procedures and their relationship with bank operational efficiency. Methodologically, the study utilizes an explanatory cross-sectional survey design, gathering primary data through structured questionnaires administered to 190 respondents across five key functional roles (compliance officers, risk managers, finance officers, internal auditors, and branch managers) in all 38 commercial banks.

1.7. Study Limitations and Delimitations

Limitations

The findings of this study are subject to specific geographical, temporal, and methodological limitations. Geographically, because data collection was restricted to commercial bank headquarters and branches located within Nairobi County, the findings may not be fully generalizable to rural banking operations in other counties or to non-bank financial institutions such as microfinance banks, SACCOs, insurance firms, and mobile money operators. Additionally, because the study focuses on commercial banks in Nairobi County, findings from the same, may not be fully applicable to banks operating in other counties as well as non-bank financial institutions (Kamper, 2020). Temporally, the study captures cross-sectional perceptions within the three-year window following the 2023 POCAMLA amendments, meaning it does not account for long-term longitudinal shifts in compliance costs or technological maturity beyond this timeframe. Methodologically, the study faced potential participant non-response or overly cautious, socially desirable reporting due to the strict confidentiality governing internal AML controls and regulatory audits. Additionally, reliance on self-reported questionnaire data introduces a risk of perceptual bias and varying interpretations of operational efficiency across different banking tiers. Furthermore, there is a possibility that the respondents could have been extremely cautious in their responses, including sharing or submitting socially desirable responses that may not have been the actual reflections of the implementation of the AML actual picture in their respective stations Vineer (2018).

Delimitations

To maintain analytical rigor and feasibility, the study was deliberately delimited in geography, institutional category, timeframe, and conceptual scope. Geographically and institutionally, the

study was delimited exclusively to the 38 licensed commercial banks operating in Nairobi County, excluding deposit-taking microfinance institutions, SACCOs, fintech firms, and insurance companies. Temporally, the scope was delimited to the three-year regulatory period immediately following the 2023 POCAMLA reforms to isolate the operational realities of current compliance mandates. Conceptually, the investigation was delimited to four core operational pillars of AML compliance, customer due diligence, transaction monitoring, transaction reporting, and staff training, evaluated through primary feedback from personnel directly involved in AML governance and branch operations.

CHAPTER TWO

LITERATURE REVIEW

2.1. Overview

This chapter establishes relationship between AML practices and operational efficiency of commercial banks, with the relevant published research and literature showing the relationship. It examines global studies from both developed and developing economies to see how these dynamics play out across commercial banks. Additionally, it digs deep into the relevant theories that may shed light on the potential association of study variables. From review findings, valuable insights shedding light on the nature of study problem are presented, shaping construction of conceptual framework, data collection and management procedures and consequently, the interpretation research findings.

2.2. Empirical Literature Review

This section, empirical literature review familiarizes the reader with current literature on the subject. It illustrates the current evidence on the influence of AML implementation of operational efficiency of banks and the gaps that exist. The researcher introduces the current studies that have been conducted previously on the subject and their findings. Through this review, a comprehensive picture on the relationship that exists among the selected variables is established.

2.2.1. The Influence of AML Customer Due Diligence on Bank Operational Efficiency

Daugaard et al. (2024) examined AML compliance as a comprehensive framework involving KYC procedures and transaction-monitoring capabilities. Conducted in collaboration with Danske Bank and Concordium, the study drew on internal documents and interviews as its primary data sources. The findings indicated that storing digitized identity details on a blockchain could automate several KYC processes and minimize repeated identity verification during customer onboarding. In addition, blockchain-based transparency enhanced the identification of counterparties, verification of sources of funds, and generation of alerts during transaction monitoring. Combined, these technological capabilities reduced the time and labor required for AML compliance, thereby potentially lowering compliance-related operational costs for financial institutions, particularly smaller banks. Ideally, record-keeping is related to reporting initiatives. The findings of this study point at how the implementing AML practices including customer due diligence systems through

a thorough financial transaction reporting enhances commercial bank operational efficiency. However, findings from this specific study are not for commercial banks operating in Nairobi County, creating an empirical gap in the subject.

Antwi et al. (2023) investigated the connection between AML regulations and financial sector development (FSD) in Africa, with particular attention on the linearity of the link. Drawing upon data stored from Basel Institute on Governance, the International Monetary Fund (IMF) and World Bank panel, the authors assessed panel of 51 African countries covering the period from 2012 to 2019. Methodologically, the analysis relied on Two-step System Generalized Method of Moments (GMM) approach. The empirical conclusions demonstrated that while statutory oversight can initially stimulate financial sector modernization, the net impact depends heavily on regulatory intensity. The results showed that up to a certain point, anti-money laundering (AML) rules helped develop the financial sector. However, once compliance demands crossed that line, the impact turned negative. This tells us that overly aggressive or restrictive AML practices can limit financial growth by putting institutions under huge compliance costs. Antwi et al. (2023) findings underscore the varying association between AML regulation execution, including customer due diligence execution mechanisms, and growth of financial sector operators, which is directly linked to the underlying operational efficiency. However, since overall findings are not for the Nairobi-based registered commercial banks, it creates an empirical gap. Methodological and conceptual gaps also emerge from the use of secondary data and the failure to capture whether these relationships apply to commercial banks.

Salami (2024) investigated how money laundering regulations on Nigeria's Deposit Money Banks impacts operational efficiency. In this study, which made use of an ex-post facto investigative approach, gathered secondary data covering 12-year horizon. The dataset was compiled from Central Bank of Nigeria Statistical repositories, NDIC periodic statements, and Basel Institute on Governance for the 2012–2024 timeframe The study found no statistically significant association between AML regulations and CIR, OER, or ROA. However, the AML regulations-ATR relationship was statistically significant. The absence of significant effects on three of the four indicators suggests that AML practices may not uniformly influence operational efficiency, although the findings do not establish that customer due diligence measures specifically have insignificant effects on operational efficiency. Methodologically, the study relied on secondary data, leaving room for research using primary data to provide further insights into how AML

measures affect bank operations. Contextually, the research focused on Nigerian banks rather than commercial banks in Nairobi, Kenya, highlighting a geographical gap that the present study seeks to address.

Chelangat and Ruthwinnie's (2023) study focused on KYC, focusing in the associated compliance cost effects on money laundering curbing among commercial banks in Kenya. The scholars considered data that was collected from 82 respondents with direct involvement in AML roles in each of the 43 commercial banks operating in Kenya by that time. From the findings a robust, positive, and statistically significant association between KYC compliance costs and ML and fraud risks was established. Artificial intelligence and machine learning technologies were highlighted as potential solutions to improve AML monitoring and reduce compliance costs. KYC is a key component of customer due diligence, and the resources required to implement it may increase banks' operating costs making the findings relevant. Higher compliance costs may place additional pressure on operational efficiency, particularly where institutions must commit substantial resources to regulatory procedures. However, the study did not specifically examine commercial banks operating in Nairobi County, leaving a contextual and empirical gap concerning the influence of AML implementation on operational efficiency within this setting.

2.2.2. The Influence of AML Transaction Monitoring System Implementation on Bank Operational Efficiency

Drawing on extensive expertise, Aidoo (2025b) developed an AML/CFT return-on-investment (ROI) framework tailored to the U.S.A. AML policy context. The framework estimated how each dollar invested in AML compliance generated multiple dollars in social value serving as a financial system safeguards. The findings indicated that, although AML compliance imposed a substantial regulatory and operational burden on financial institutions, it also supported key national interests. Aidoo's (2025b) (*The Cost of AML Compliance*), findings are vital for this research because they shed light on how AML programs complicate the operations of financial institutions. Precisely, the author hinges the findings on the cost-benefit analysis, where he claims that financial institutions are compelled to incur additional costs while executing the AML procedures, but the social benefits from these procedures outweigh these costs. The suggestion from the outcome is that AML measures like installation of transaction monitoring systems may pose an adverse effect on commercial banks' operational efficiency through added costs linked to execution. However, since

it is based in the USA, it creates an empirical gap because it does not assess these relationships in the contexts of commercial banks that operate in Nairobi County

Al Qudah et al. (2024) examined how AML mechanisms are associated with Jordanian banks' financial performance, considering macroeconomic variables and bank-specific factors. Descriptive-analytical design as well as analyzed unbalanced panel data from 12 Amman Stock Exchange-listed banks over a 14-year period (2007–2021) was employed. Fixed-effects models were used to estimate the relationships between AML practices, bank operational efficiency indicators, and the selected economic variables. The study outcome indicated that the effect of the stringent AML requirements on operational efficiency was negative and statistically significant. This effect was attributable to the associated with costs. This was different for larger bank size and higher liquidity (Tier I), where the evaluation of this effect using quick ratio revealed improved profitability. Potential trade-off between the costs of implementing AML procedures and banks' financial performance is highlighted. The resources required to implement measures such as transaction monitoring may affect operational efficiency, although financial performance and operational efficiency are distinct outcomes. The study's focus on Jordanian banks also leaves a geographical research gap concerning the effects of AML implementation on commercial banks in Nairobi, efficiency in their operations.

Ofoeda, Tuffour and Nketia (2023) examined the association between AML regulations and Sub-Saharan Africa (SSA)'s financial inclusion. A seven-year (2012–2019) panel data from 44 SSA countries was analyzed using System Generalized Method of Moments (SGMM) estimation technique. From the study's findings, it was revealed that AML regulations shrank account ownership and commercial bank's branches but increased its depositors and borrowers, as well as ATM availability. The study further established that regulatory effectiveness moderates these outcomes. How AML regulation effects on banking-related outcomes vary by regulatory institution effectiveness is reflected in this study. However, the study concentrated on financial inclusion across SSA rather than the commercial banks in Nairobi County, Kenya. This difference highlights a contextual and empirical gap that warrants localized investigation into the relationship between AML implementation and operational efficiency.

Sainah (2016) demonstrates the connection of AML risk assessment and the commercial banks financial performance in Kenya. A descriptive research design based on secondary data was used. The data was extracted from 43 commercial banks in 2014. Multiple linear regression and

correlation analyses revealed that the association between these variables is weak, with AML risk assessment having a negative association with return on assets (ROA). The additional operational costs associated with AML compliance were linked with a reduction in the banks' net income and, consequently, their ROA. The study of Sainah (2016) is vital for the current research because it provides localized evidence that demonstrates how the execution of AML such as installation of transaction monitoring systems affects commercial banks. Performance. The reduced performance that is linked to AML procedures signals a reduction in operational efficiency when AML measures like transaction monitoring systems are executed. However, the scholar secondary data, implying that the persons who are directly involved in AML were not given an opportunity to demonstrate their first-hand experiences. This creates both methodological and conceptual gaps because the conclusion was based on secondary data, and the basis of interpretation was on observation of the financial patterns rather than the experiences of relevant persons.

2.2.3. The Influence of AML Reporting System Implementation on Bank Operational Efficiency

Hassan and Sajid (2026) examined banking experts' perceptions of the costs and complexities linked to AML regulation compliance and how they affect banking operations in Pakistan. The researchers adopted a socio-legal approach, combining library-based research with semi-structured interviews conducted with Pakistani banking officers through social media platforms. The findings indicated that AML requirement compliance imposed considerable financial and operational challenges on banks, in terms of costs and regulatory complexity. That said, these compliance costs were comparatively lower than the financial penalties and other consequences associated with non-compliance. The study by Hassan and Sajid (2026) is important to the current one because it demonstrates the possible impact of AML compliance by financial firms on performance, which includes the effects of adopting suspicious transaction reporting systems. Ideally, the associated rise in operational constraints signals the underlying decline in operational efficiency if the commercial bank has limited resources. Then again, these results are based in Pakistan, rather than commercial banks in Nairobi. This creates an empirical gap in the subject.

Aidoo et al. (2025) examined several high-profile Anti-Money Laundering (AML) compliance failures, including cases involving HSBC, Danske Bank, Westpac, the FinCEN Files, and a major cryptocurrency exchange, seeking to identify the underlying causes of these failures and derive

lessons for strengthening AML frameworks. The study reported that weaknesses in compliance systems enabled illicit funds to move through the financial system, thereby facilitating organized crime, sanctions evasion, corruption, and child exploitation. Across the cases, the findings revealed recurring weaknesses, including poor compliance cultures, inadequate corporate governance, insufficient financial and human resources, technological limitations, and ineffective oversight mechanisms. Aidoo et al. (2025) research lays a foundation for the current study by demonstrating how poor AML execution by financial institutions, including failure to install suspicious transaction reporting systems rases the chances of collapse of these institutions. Ideally, the failure can be associated with a reduction in operational efficiency. Data obtained from global operators in the financial sector rather than commercial banks operating in Nairobi, creating an empirical gap in the subject was the basis for the study.

Ofoeda et al. (2022) assessed how the AML regulations affect financial sector development The study, which spanned 165 countries, was conducted between 2012 and 2018. The main focus of the research was whether the influence of AML measures differed between developed and developing economies and whether nonlinear relationships existed between regulatory requirements and development of this sector. Research findings indicated that AML regulations generally promoted development of financial sector, with stronger effects observed in developing economies than in developed countries. It can be inferred from study that the contribution of AML regulations to development of the sector may depend on the context in which they are implemented, with developing economies potentially benefiting more from stronger regulatory frameworks than the more developed ones. Ofoeda et al.'s (2022) findings are important in the current research because they illustrate the potential impact of AML execution, including installation of suspicious transaction reporting systems on financial sector players, including commercial banks. The study underscores better results in developing countries like Kenya than in developed ones, suggesting that the operational efficiency of banks improves when these requirements are adhered to. However, the findings are based on data obtained from several countries rather than Nairobi County, creating an empirical gap on the need for localized studies to assess these relationships.

Issah et al. (2022) assessed how AML regulations shape banking sector stability. The study, which was conducted across 51 African countries between 2012 and 2019, revealed a positive link between AML regulations and banking sector stability, and this relationship was statistically

significant, suggesting that stronger AML frameworks may contribute to a more stable banking sector. To the current research, the findings are important because they demonstrate how effective AML regulatory frameworks like effective suspicious transaction reporting systems contribute to the commercial banks' operational efficiency across Africa, which is reflected in the strengthening of financial stability within African banking systems. However, since they are continent-wide rather than Nairobi county-based, the findings create an empirical gap, necessitating localized empirical evidence to establish these relationships.

Auwalu and Mustapha (2025) assessed how money laundering activities shape the operational performance of commercial banks, with a particular emphasis on suspicious transaction disclosure, internal controls, and KYC processes. Auwalu and Mustapha (2025) employed quantitative research design, collecting primary data from various AML experts. The findings of this study showed that suspicious transaction exposure negatively and significantly affect financial performance, on the other hand, effective AML internal controls and quality KYC processes poses opposite effects. The strongest factor was AML internal controls in predicting commercial bank operational performance, highlighting the importance of robust internal procedures in supporting banks' operational outcomes. Auwalu and Mustapha's (2025) are relevant the current research because they demonstrate how AML reporting systems can affect the operational performance, which is directly linked to efficiency. However, since it does not assess this relationship for commercial banks that operate in Nairobi County, it creates an empirical gap.

An investigation was done by McIntosh (2015) on how risk assessment and commercial banks' operating in Kenya financial performance are linked. A descriptive research design was adopted, using secondary data extracted from 43 commercial banks in 2014. A close attention was paid to AML-related factors, including suspicious transaction uncovering, additional staffing costs, and transaction-monitoring expenses. A weak relationship between the two variables was established. It was also revealed that a negative association between this risk assessment and Return On Asset, which the researchers attributed to the additional operating costs of AML compliance, which may reduce banks' net income and, consequently, their ROA. From the findings, the possibility that implementing AML measures, like suspicious transaction reporting systems, may impose additional costs that affect operational efficiency is revealed. However, the study relied exclusively on secondary financial data, leaving a methodological gap regarding the experiences of personnel directly involved in day-to-day AML activities. Collecting primary data from these professionals

could provide further insight into how AML implementation influences operational efficiency beyond what can be inferred from financial trends alone.

2.2.4. The Influence of AML Staff Training on Bank Operational Efficiency

Haffke (2022) examined the AML views of MLROs and Directors in Germany. This was based on the fact that although MLROs undertake day-to-day AML responsibilities, directors remain ultimately accountable for compliance, making alignment between directors' expectations and MLROs' actual duties important for reducing liability risks. The researchers audited the current expectation-performance gap to uncover the differences in knowledge, expectations, task performance, and communication between MLROs and directors. A paired electronic survey of 136 MLRO-director pairs from German companies was conducted in autumn 2020. The findings shown no significant knowledge gap or duty performance between the two groups. However, some expectations were considered unreasonable, while communication required improvement. The study further reported that MLROs in German non-financial businesses demonstrated lower AML knowledge, poorer task performance, and less effective communication with directors. This study generates critical insights into efficiency impact of AML execution by banks through the lens of bureaucracies and role clashes when various parties are involved in AML activities. This is the human interface assessment of the AML proving that when there is harmony among the executors, the operational efficiency is unaffected. However, since the findings are based in Germany rather than commercial banks in Nairobi, the study creates an empirical gap.

Oduro, Okoli and Serifat (2025) investigated the effects of integrating Regulatory Technology (RegTech) with blockchain technology on AML compliance within financial institutions worldwide. The study employed a 12-case systematic literature review from an initial pool of 180 sources from various jurisdictions worldwide, with particular emphasis on peer-reviewed studies and institutional reports providing practical insights into the application of RegTech and blockchain in AML processes. Emphasis was on financial, operational, and regulatory performance and the vital role played by joint efforts between supervisory agencies and financial entities. It was established that RegTech enhanced the KYC accuracy and effectiveness procedures and transaction observation, whereas blockchain strengthened transparency, traceability, and accountability. Also, integrating these technologies reduced compliance costs and improved operational efficiency, particularly where regulators and financial institutions actively collaborated

in implementing AML solutions. Oduro et al's (2025) study is relevant because it demonstrates how AML implementation affects institutions. The rise in costs is an operational inconvenience, but the study establishes that this rise is associated with enhanced operational efficiency. Then again, since this study is global-data-based rather than centered in Nairobi County commercial banks, it creates an empirical gap in the subject.

Muriithi (2013) based his study on the effects of implementing AML regulations on commercial bank financial performance in Kenya. Data was gathered from 31 commercial banks, survey used to analyze the same. It was noted that bank reporting requirements influence AML compliance by increasing transaction costs associated with customer screening, while also increasing the frequency and scope of reports prepared by banks. Besides, it was established that operational expenses significantly affect commercial banks' performance, particularly because of increased transaction costs and expenditure on staff training to identify suspicious activities. These outcomes carry along significant relevance here, since they demonstrate how the execution of AML requirements may adversely affect commercial bank performance. However, the study is conducted on all banks nationwide, rather than Nairobi County. This creates an empirical evidence gap due to a lack of localized information on the execution of the AML requirements in the predominance of commercial banks in the country's busiest zones.

Terer (2025) reviewed the impact that AML practices have on the commercial bank profitability within Kenya, recognizing that banks are essential to economic stability but face risks which has a possibility of undermining the bottom line which is the profitability. The study was inspired by the 2018 penalties imposed by the CBK on five banks for AML violations, prompting financial industry players to increase investments in compliance, raising operational costs. The study's focus was CDD, monitoring of transactions, AML audits, and staff AML training, while also evaluating the moderating role of corporate governance. The study adopted explanatory design, focusing 105 employees across the current 39 banks that are registered in Kenya today. Primary and secondary data analyses established that all four AML practices significantly and positively influenced bank profitability, while corporate governance significantly strengthened their relationship. Terer's (2025) study is relevant to the current research because it highlights the impacts of AML compliance on banks' performance. However, the study focused on performance, which does not necessarily imply an improvement in operational efficiency. This creates a gap in the

understanding of how these AML practices influence operational efficiency of these commercial banks operating within Kenya.

2.2.5. Summary of Empirical, Methodological, and Contextual Gaps

A critical review of the empirical literature reveals distinct contextual, empirical, methodological, and conceptual gaps that necessitate the present investigation. Geographically and contextually, a substantial body of existing scholarship on AML compliance and banking outcomes has been conducted in foreign jurisdictions—including Denmark (Daugaard et al., 2024), the United States (Aidoo, 2025), Jordan (Al Qudah et al., 2024), Pakistan (Hassan & Sajid, 2026), Germany (Haffke, 2022), and Nigeria (Salami, 2024; Auwalu & Mustapha, 2025)—or relied on broad cross-country panels across Africa (Antwi et al., 2023; Ofoeda et al., 2022, 2023; Issah et al., 2022). Because regulatory enforcement, technological infrastructure, and transaction volumes vary significantly across jurisdictions, findings from foreign markets or macro-regional panels cannot be directly extrapolated to commercial banks headquartered in Nairobi County.

Methodologically, several prior regional and Kenyan studies, such as Antwi et al. (2023), Salami (2024), Sainah (2016), and Macintosh (2015), relied exclusively on secondary financial ratios and macroeconomic datasets. While secondary data captures aggregate financial trends, it fails to isolate the specific operational bottlenecks, alert-handling delays, and workflow duplications experienced firsthand by compliance officers, risk managers, internal auditors, finance officers, and branch managers on a daily basis. Finally, conceptually and empirically, existing Kenyan studies have largely examined KYC compliance costs in relation to fraud prevention (Chelangat & Ruthwinnie, 2023) or assessed AML practices in relation to overall bank profitability and financial performance (Muriithi, 2013; Terer, 2025). Limited empirical attention has been paid to isolating operational efficiency—specifically transaction processing speed, staff productivity, alert investigation turnaround times, and compliance cost efficiency—within Nairobi County's commercial banking sector following the 2023 POCAMLA regulatory reforms.

2.3. Theoretical Framework

2.3.1. Compliance Theory

Compliance Theory, developed through the foundational works of Eugene Bardach and Robert A. Kagan (1982), Tom R. Tyler (1990), and Ian Ayres and John Braithwaite (1992), and further synthesized across legal, organizational, and public administration literature (Etienne, 2011), explains how organizations respond to statutory mandates, regulatory rules, and institutional expectations. Within the banking sector, the theory suggests that financial institutions adhere to regulatory standards to mitigate legal and financial sanctions, secure organizational legitimacy, and preserve trust among regulators, customers, and investors (Gray & Silbey, 2014). Applied to Anti-Money Laundering (AML), Compliance Theory establishes why commercial banks invest heavily in Customer Due Diligence (CDD), Know-Your-Customer (KYC) protocols, transaction monitoring, suspicious activity reporting, and employee training despite substantial financial and administrative costs.

A primary strength of Compliance Theory is its recognition that external regulatory pressure shapes institutional governance and risk controls. By embedding AML procedures into daily operations, commercial banks reduce exposure to money laundering, regulatory penalties, reputational harm, and operational disruptions. However, classical Compliance Theory often treats regulatory adherence as a uniform, two-fold response to external enforcement, overlooking how internal implementation design dictates operational outcomes. When institutions adopt AML practices merely to satisfy statutory audits, resulting in a fragmented "box-ticking" approach, compliance becomes an administrative burden that inflates overhead expenses and slows service delivery.

The empirical findings of this study extend Compliance Theory by demonstrating that the operational impact of mandatory regulatory compliance is not automatic, but is critically mediated by institutional technology adoption and workflow streamlining. Specifically, while commercial banks in Nairobi County are subject to identical statutory mandates under the Proceeds of Crime and Anti-Money Laundering Act (POCAMLA) and Central Bank of Kenya (CBK) guidelines, the study's regression results reveal divergent operational outcomes across AML practices. Automated, technology-driven compliance mechanisms, i.e., transaction monitoring systems (beta = 0.494, $p < 0.05$), transaction reporting systems (beta = 0.214, $p < 0.05$), and staff training (beta

= 0.353, $p < 0.05$) significantly enhance operational efficiency by accelerating alert detection, minimizing manual errors, and reducing processing delays. Conversely, Customer Due Diligence (CDD) exerts a statistically significant negative effect on operational efficiency (beta = - 0.826, $p < 0.05$) because intensive identity verification, repetitive documentation, and manual periodic reviews disrupt routine workflows when inadequately streamlined. Thus, this research refines Compliance Theory by proving that regulatory adherence improves institutional efficiency only when statutory rules are translated into automated, well-integrated operational workflows rather than rigid procedural layers.

2.3.2. Agency Theory

Agency Theory, pioneered by Stephen Ross (1973) in *"The Economic Theory of Agency: The Principal's Problem"* (Ross, 2000), examines the contractual and behavioral dynamics between principals (such as bank shareholders and regulators) and agents (such as bank managers and employees) entrusted with managing organizational resources. Conflicts of interest arise when agents possess more operational information, creating information asymmetry, or pursue short-term commercial targets at the expense of long-term institutional safety. Within commercial banking, Agency Theory is directly applicable to AML governance because robust internal controls reduce information asymmetry, curb managerial opportunism, and prevent employees or external actors from exploiting banking channels for illicit financial flows (Moloi & Marwala, 2020).

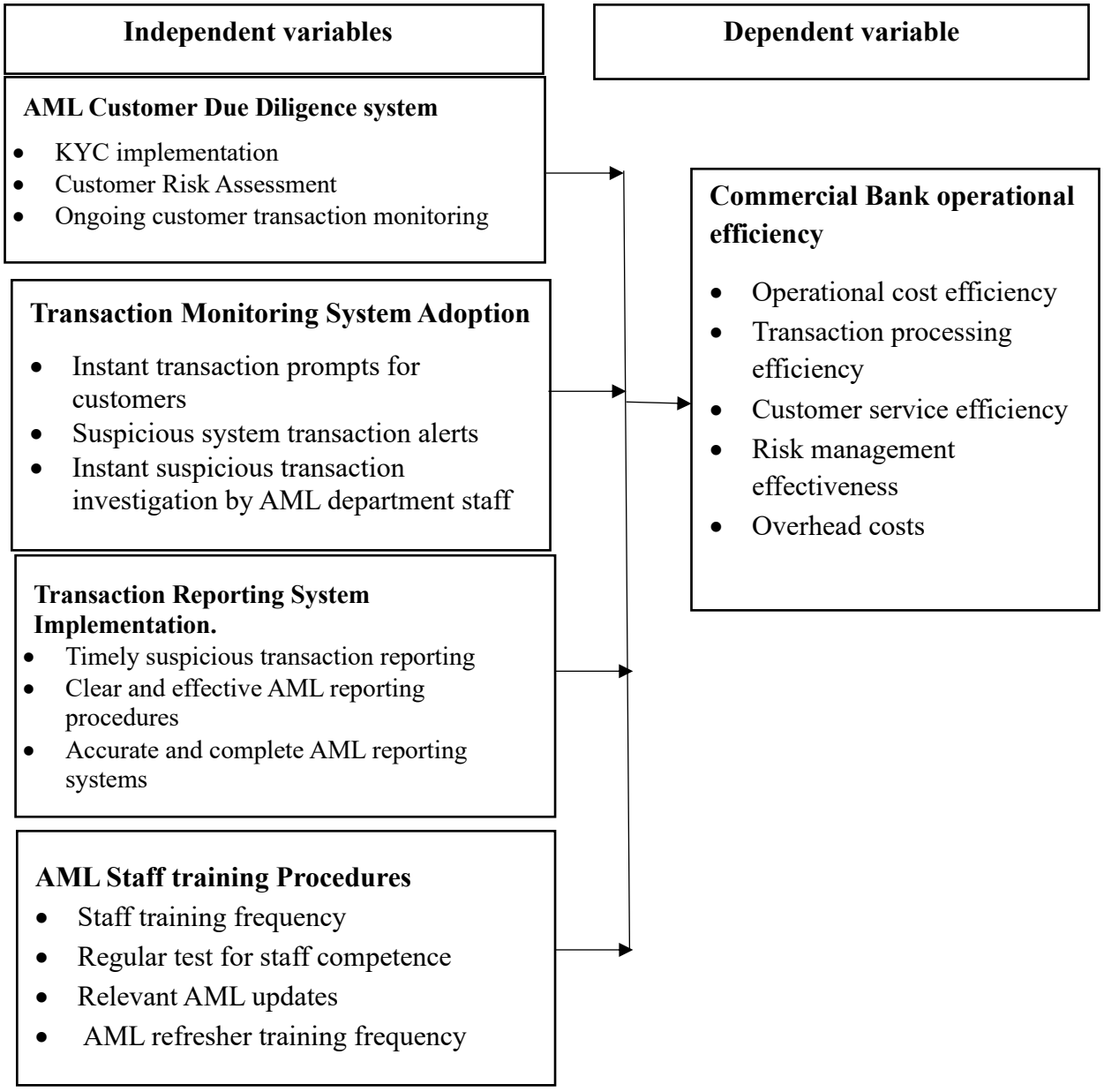
Agency Theory is particularly valuable in explaining the necessity of internal oversight mechanisms, such as KYC verification, real-time transaction monitoring, suspicious transaction reporting, internal audits, and segregation of duties, to enforce accountability across banking operations. By constraining agency problems and detecting irregularities early, effective AML controls protect shareholder value, prevent costly regulatory fines, and safeguard institutional stability. Nevertheless, traditional Agency Theory carries a notable limitation: it assumes that increasing monitoring and control mechanisms inherently improves organizational outcomes, often overlooking the agency costs of excessive surveillance. In highly regulated banking environments, layering intensive manual controls onto front-office operations demands extra personnel, time, and administrative overhead, which can create operational bottlenecks and degrade service speed.

Agency Theory demonstrates that technological automation and process streamlining determine whether internal monitoring reduces agency costs or creates operational inefficiencies. In classical agency models, stricter oversight typically involves a direct trade-off between control effectiveness and administrative cost. However, the empirical evidence from Nairobi County's commercial banks shows that digital transaction monitoring systems, automated reporting channels, and targeted staff training simultaneously reduce information asymmetry and improve operational efficiency. These tools lower monitoring costs by enabling compliance teams to detect anomalies instantly without manual intervention. By contrast, the negative relationship between Customer Due Diligence (CDD) and operational efficiency highlights the threshold at which procedural monitoring becomes counterproductive: when verification and risk-profiling workflows remain fragmented or overly manual, the resulting administrative friction outweighs immediate efficiency gains. Consequently, these findings advance Agency Theory by establishing that optimal agency control in modern banking depends on smart technological integration and streamlined workflows that align risk mitigation with operational speed.

2.4. Conceptual Framework

This structural framework outlines how variables interact based on theoretical and empirical review. It also presents the indicators that are used for measuring both dependent and independent variables. The framework consequently, offers basis for empirically examining whether AML compliance systems enhance or hinder the operational efficiency of commercial banks.

Figure 1 - Conceptual Framework



Source: Researcher, 2026

The conceptual framework presents the expected linkage between AML compliance systems and commercial banks' operational efficiency. At the core of this particular argument, was proposal that effective implementation of the four AML compliance systems contributes to improved operational efficiency. At the same time, excessive or poorly implemented AML requirements may increase administrative costs and transaction-processing delays, potentially constraining efficiency. The researcher anchored her argument on the proposition that effective implementation

of the four AML systems can strengthen internal processes, minimize financial and regulatory risks, improve resource utilization, and consequently enhance bank operational efficiency. The independent variables comprise AML Customer Due Diligence System Implementation, Transaction Monitoring System Implementation, Transaction Reporting System Implementation, and AML Staff Training Procedures Implementation, while operational efficiency constitutes the dependent variable.

AML Customer Due Diligence System Implementation was measured through respondent experiences and perceptions of KYC implementation, customer risk assessment, and ongoing customer transaction monitoring. It was conceived that effective KYC procedures enable banks to establish and verify customer identities, while customer risk assessment assists institutions in identifying customers who present higher money-laundering risks. Ongoing transaction monitoring was viewed as an enabler of banks to identify unusual customer activities. Collectively, these practices can reduce exposure to financial crime and support efficient banking operations. At the same time, they can escalate the banks' operational costs

Transaction Monitoring System Implementation was measured through instant transaction queries for customers, suspicious system transaction alerts, and suspicious transaction prompts. These mechanisms were conceived to play a key role in identifying potentially unusual transactions and facilitate timely intervention. Effective monitoring systems may therefore reduce manual processing, improve detection efficiency, and minimize losses associated with fraudulent or illicit transactions. At the same time, the implementation of these systems can increase operational costs, negatively affecting efficiency.

Transaction Reporting System Implementation was assessed through timely suspicious transaction reporting, clear and effective AML reporting procedures, and accurate and complete AML reporting systems. Based on the review of literature, effective reporting mechanisms enable banks to communicate suspicious activities to relevant authorities promptly and accurately. This may reduce regulatory exposure, enhance compliance, and minimize operational disruptions arising from regulatory violations. That said, the execution of the systems to handle this function can increase operational costs, negatively affecting efficiency.

AML Staff Training Procedures Implementation was measured through staff training frequency, the need for competent AML staff, the relevance of AML training, and adequacy of AML training procedures that these banks employ. Regular and relevant training was seen as a way of equipping

employees with essential expertise and capabilities required to identify, prevent, monitor, and report money laundering activities. Competent personnel can implement AML controls more effectively, potentially reducing errors, processing delays, and compliance-related operational costs.

The dependent variable, operational efficiency, was measured using operational cost efficiency, transaction processing efficiency, customer service efficiency, and risk management effectiveness. Operational cost efficiency reflects the bank's ability to control resources and compliance-related expenses. Transaction processing efficiency captures the speed and accuracy of processing legitimate transactions. Customer service efficiency reflects the ability to provide timely and reliable services while maintaining AML controls, whereas risk management effectiveness represents the bank's capacity to identify and mitigate financial and compliance risks.

CHAPTER THREE
RESERCH METHDODOLOGY

3.1. Overview

The methodology chapter offers a thorough explanation of methods that were used to examine how implementation of AML practices affects operational efficiency of commercial banks in Nairobi County. The chapter incorporates subsections, including research philosophy and design alongside targeted population and sampling techniques. It further expands on data acquisition tools, ascertaining the steps taken to verify instrument accuracy and consistency, data management and presentation along with ethical considerations.

3.2. Research Philosophy

This particular study is grounded in Pragmatism. As a research paradigm, pragmatism focuses on choosing the most effective methods and approaches to solve a research problem and meet a study's objectives. Pragmatism focuses on the practical outcomes of research and how knowledge can solve real-world problems making it most suitable for this specific study. According to Omodan (2024), the specific research questions, the nature of the required evidence, and the practical goals of a project should dictate the chosen research methods. This philosophy acknowledges that different types of knowledge offer valuable insights into a single problem, meaning a researcher should use whatever approaches best explain the phenomenon being studied. Guided by this philosophy, this study views Anti-Money Laundering (AML) execution strategies as vital factors that heavily influence how commercial banks operate and serve their customers. Implementing these strategies often introduces new layers of security, which demands extra operational resources and forces banks to adjust their traditional workflows. Pragmatism is an ideal fit for this study because of the pressing need to gather practical evidence on how AML practices impact operational efficiency in commercial banks within Nairobi County. The focus was on four highly prominent AML dimensions, which are AML compliance costs, reporting requirements, monitoring system adoption, and enforcement procedures.

Whether looked at individually or together, these systems significantly shape a bank's operational efficiency. While this study relies on measuring objective variables using primary data gathered from the firsthand experiences of bank employees and AML compliance personnel, pragmatism fully supports this approach, granting the researcher the flexibility to determine both the course

and strength of the connections between these concrete AML practices and the operational efficiency of banks.

Ultimately, pragmatism was selected because this study tackles a live, practical challenge, balancing smooth day-to-day banking operations with strict national regulations, rather than exploring a purely theoretical debate. This aligns perfectly with the core objective of providing highly useful, actionable evidence regarding the impacts of AML procedures for key stakeholders, including commercial banks, regulatory bodies, academics, and policymakers (Omodan, 2024). By examining how AML practices interact with commercial banks' operational efficiency in Nairobi County, this pragmatic lens ensures the generation of real-world solutions to immediate industry problems.

3.3. Research Design

Explanatory research design was employed. The process entailed conducting a survey on relevant employees in the chosen county. An explanatory research design entails investigating and explaining the cause-and-effect connection between variables. As such, this design encapsulated going beyond describing a phenomenon by seeking to determine why and how one variable influence another (Skinner & Dancis, 2026). The explanatory approach was chosen since it permitted the scholar to dig deep into the four main current AML execution strategies to uncover how these practices affect operational efficiency in terms of serving their clients smoothly and utilizing their resources prudently. A cross-sectional survey was preferred because of the need to go beyond the observed changes in efficiency to collect relevant views and experiences from staffs who have first-hand experiences on how these practices are affecting the operation efficiency of their respective banks. Secondary data could provide a hint on these impacts. However, since operational efficiency is a function of multiple factors, using secondary data may fail to isolate other factors that may be connected with this operational efficiency. By collecting and analyzing primary data from a large number of relevant respondents to examine the relationship between AML practices and operational efficiency, this study obtained increasingly precise information about the associations between the AML system variables and operational efficiency, overcoming the errors associated with measuring this relationship using secondary data (Hair et al., 2023). Cross-sectional survey was applied, data gathered from participants during a single timeframe rather than over an extended period. The study targeted employees involved in AML compliance,

risk management, operations, finance, internal audit, and other related functions in commercial banks (Nardi, 2018). The choice of these employees as participants was informed by their positioning in the AML implementation by banks, enabling them to possess sufficient knowledge of the AML procedures, together with the degree to which these procedures affect daily operations. Data collection relied on structural questionnaire containing closed-ended questions and statements evaluated via a Likert scale matrix. The questions covered perceptions of implementation, compliance merits and potential technicalities in reporting requirements, monitoring system adoption, and enforcement procedures and the associated bank operational efficiency. The outcome, operational efficiency, was measured through the lens of operating costs, transaction processing time, employee workload, resource utilization, and service delivery.

3.4. Target Population

This study focused on a target population consisting of the current 38 licensed commercial banks that own operation centers in Nairobi County. The choice of Nairobi was informed by the concentration of these banks and the large number of customers that they serve. Being Kenya's principal financial hub, the city hosts the headquarters of most commercial banks and key financial regulatory institutions, making it an appropriate setting for examining the implementation of AML requirements (Makui, Abdul, & Musau, 2024). The study recognizes variation among banks in size, ownership, resources, and compliance capacity as a suitable basis for examining AML practices across different institutional contexts.

3.5. Sampling Procedure and Sample Size

Census was adopted in this study. This implies that all the current 38 commercial banks were considered in the study sample (Woodrow-Lafield, 2019). The study focused on five categories of respondents who are directly serve in AML implementation departments that are connected to banking operations, namely branch managers, risk managers, internal auditors, compliance officers, and finance officers. One respondent was drawn from each category for all 38 banks. Considering this, the sample comprised; 38 branch managers, 38 risk managers, 38 internal auditors, 38 compliance officers, and 38 finance officers, giving a total target population of 190 respondents.

Table 1 - Study Sample

Population Category	Frequency	Sample Percentage (%)
Branch Managers	38	20%
Risk Managers	38	20%
Internal Auditors	38	20%
Finance Officers	38	20%
Compliance Officers	38	20%
TOTAL	190	100%

Source: Researcher, 2026

The respondents were purposely sampled. Purposive sampling entails deliberately selecting respondent's whole are deemed to possess specific knowledge, experience, features, or skills relevant to the study. Ideally, the principal researcher directly contacted the selected commercial banks, introduced herself, and formally requested for go-ahead from respective management to proceed with the survey. The scholar provided the management with information on the purpose of the study and the specific categories of employees targeted for participation. Upon receiving the necessary approval, the survey instruments were personally administered to selected participants, with arrangements made on when to collect the completed questionnaires.

While the census survey targeted 190 respondents across five functional categories (branch managers, risk managers, internal auditors, compliance officers, and finance officers) in all 38 licensed commercial banks, the questionnaire was structured using role-specific and practice-filtered modules. General descriptive profiles and overall adoption perceptions were analyzed across the full pool of returned questionnaires (N = 184). However, for inferential correlation and regression modeling, responses were filtered to include only respondents with direct operational oversight of each respective AML system module, or aggregated to represent specialized bank-level compliance units across the 38 institutions, alongside listwise deletion of incomplete module ratings. Consequently, the final analytical sample sizes for the bivariate and multivariate regression models ranged between (n = 43) and (n = 48), ensuring that inferential estimates were derived strictly from respondents with complete, firsthand technical interaction with each specific AML system.

3.6. Data Collection Instrument

Structured questionnaire was employed to collect relevant data. Questionnaire was administered to risk managers, internal auditors, compliance officers, and finance officers from the 38 licensed commercial banks (Afolayan & Oniyinde, 2019). The choice of the survey respondents and key informants was informed by their responsibilities, which are closely connected to AML implementation and banking operations. This defined questionnaire had closed-ended questions measured using Likert scale. Questions covered respondent perceptions on AML compliance costs, reporting requirements, monitoring system adoption, enforcement procedures, and operational efficiency.

3.6.1. Validity and Reliability

This study emphasized instrument validity and reliability. The main goal of validity ascertaining efforts was ensuring that appropriate questions could be presented throughout the data gathering exercise, and this could happen in a manner that the respondents could understand. This is crucial for guaranteeing that only relevant data is collected at the end of the exercise for the research to meet its objectives.

3.6.1.1. Validity Test

According to Ahmed and Ishtiaq (2021), validity refers to the degree of accuracy with which a research instrument measures the theoretical constructs it is intended to assess. To establish content validity, the structured questionnaire was developed directly from the study's conceptual framework and specific objectives, and subsequently subjected to a rigorous expert review by the university supervisor and subject-matter specialists in banking compliance. These reviewers evaluated the wording, clarity, technical relevance, and alignment of each Likert item with Anti-Money Laundering (AML) practices and operational efficiency indicators.

Furthermore, quantitative content validation was conducted using pilot data to compute the Scale-Level Content Validity Index (S-CVI) via universal agreement. All four independent constructs exceeded the accepted benchmark of 0.80, recording S-CVI scores of 0.90 or higher across all modules, specifically 0.91 for Customer Due Diligence (CDD) systems, 0.94 for Transaction Monitoring systems, 0.90 for Transaction Reporting systems, and 0.93 for AML Staff Training.

Feedback from the expert review and S-CVI assessment was used to refine ambiguous phrasing and remove redundant items prior to final administration.

3.6.1.2. Study Reliability

Reliability evaluates the stability and internal consistency of a measurement instrument in producing dependable results across respondents (Sürücü, 2020). To verify internal consistency reliability, a pilot study was conducted among 29 respondents (n = 29, representing approximately 15% of the target sample) holding equivalent compliance, risk, audit, finance, and branch management roles in commercial banks operating in neighboring Kitengela town, Kajiado County. Kitengela was selected due to its close commercial proximity to Nairobi County and comparable banking operational structures, while preventing contamination of the main study sample.

Pilot data were analyzed using Cronbach's Alpha (α) to assess internal consistency across each multi-item construct, adopting the standard acceptance threshold of $\alpha > 0.70$ (Wasiam, 2024). All study constructs demonstrated strong internal consistency, yielding Cronbach's alpha coefficients of 0.79 and above, specifically 0.83 for Customer Due Diligence systems, 0.81 for Transaction Monitoring systems, 0.79 for Transaction Reporting systems, and 0.85 for AML Staff Training. Because every construct met or surpassed the $\alpha \geq 0.79$ reliability standard and S-CVI ≥ 0.90 validity threshold, the questionnaire was confirmed as both valid and reliable for main data collection in Nairobi County.

3.7. Data Collection Procedure

Cross-sectional surveys used to collect data. The survey gathered data that could provide qualitative insights that help explain the experiences and perspectives of individuals directly involved in AML implementation within commercial banks in Nairobi County (Afolayan et al., 2019). The researcher approached the selected banks, obtain the necessary permission, identify eligible respondents, and distribute the questionnaires either physically or electronically. At an agreed time, completed questionnaires were collected and checked for completeness before analysis. That said, with the respondents' consent, interviews were recorded and supplemented with written notes. The recordings were transcribed and reviewed to identify recurring themes and explanations concerning how AML requirements affect operational efficiency. The quantitative survey findings and qualitative KII findings was then considered together to provide a more

comprehensive picture of the AML practice connection with commercial banks' operational efficiency in Nairobi County.

3.8. Data Analysis

The study employed quantitative techniques to analyze data and generate comprehensive picture of how AML practices shape commercial banks' operational efficiency in Nairobi County. This was achieved by cleaning and analyzing the relevant data, a process that entailed checking for completeness of quantitative data collected. The data was then coded, and entered in MS. Excel for analysis. Hypothesis tests were conducted using detailed descriptive and inferential analyses (Selvamuthu & Das2024). The descriptive analysis summarized the participant characteristics and the statement scores for the main study variables. Additionally, a Pearson correlation test was executed to explore direction and degree of variable associations.

Bivariate linear regression analysis was modeled to examine association between each AML variable independently against operational efficiency separately. Specifically, bivariate models were created for the influence of AML customer due diligence, AML reporting system implementation, AML monitoring system adoption, and AML staff training procedures on operational efficiency. The bivariate linear regression was followed by multivariate linear regression to establish their combined effects on operational efficiency at the same time checking for the effects of the other AML variables. The regression results were interpreted using the regression coefficient, ANOVA, and coefficient of determination significance level (Ali, Bhaskar & Sudheesh, 2019). This analysis helped to define both the trajectory and intensity of correlation connecting each independent variable and the dependent variable.

3.8.1. Model Specification

This research used data obtained using the structured questionnaires. Notably, each of the respondents was asked to rate each statement that relates to the variables on a Likert scale. The Likert scale values for all the variables were allocated as follows; Strongly agree (5), Agree (4), Neutral / Undecided (3), Disagree (2) and Strongly disagree (1).

To align data, values were transformed relative to the positive or negative sentiments of the feedback. By doing this, the ordinal data was treated as continuous data. This laid the foundation for the creation of both bivariate and multivariate regression analyses. The bivariate regression function took the forms below;

$Y=EI=\beta_0+X_1+X_2+X_{3+}\epsilon$

Where;

$E1=\beta_0+\beta X_{1+}\epsilon$……i

$E2=\beta_0+\beta X_{2+}\epsilon$……ii

$E3=\beta_{0+}\beta X_{3+}\epsilon$…… iii

$E4=\beta_{0+}\beta X_{4+}\epsilon$……...iv

Where;

X_1, X_2, X_3 and X_4 are the independent variables or factors representing AML compliance measures (due diligence, reporting, monitoring and staff training). Where, β_1, β_2 β_3 and β_4 represent independent variable coefficients.

ϵ is the error term representing any unexplained variation in operational efficiency of commercial banks

The β_1, β_2 β_3 and β_4 shown direction and strength of the relationship between the predictor (financing options) with outcome variable. The main focus was the coefficient of determination, ANOVA, strength and statistical significance, and the strength and statistical significance of the predictors (Selvamuthu & Das, 2024). The multivariate model without the moderator

$Y=\beta_0+\beta_1X_{1+}\beta_2X_2+\beta_3X_3+\beta_4X_4+\epsilon$……...…v

Where Y represents commercial bank's operational efficiency

X_1, X_2, X_3 and X_4 represent the independent variables (bank, MFI, SACCO and microloan mobile lender financing options respectively).

B_0 represents the constant for the multiple linear regression model

β_1, β_2, β_3 and β_4 represent the beta coefficients which indicated direction and strength of relationship between the predictor and outcome variable in multiple linear regression model.

ϵ is the error term representing any unexplained variation in operational efficiency in the model.

The multivariate linear regression model showed the integrated predictive effect of the four AML compliance measures on commercial bank efficiency in Nairobi County.

3.8.2. Diagnostic Tests

Various diagnostic tests were carried on the collected data to make sure the data is suitable for linear regression. A violation of the assumptions necessitated data transformation. This is vital for ensuring that the predictions made are accurate.

3.8.1.1. Normality Test

To determine whether the composite numerical scores approximately follow a normal distribution, normality test was conducted. This is crucial to the assumptions underlying linear regression (Flatt & Jacobs, 2019). To measure normality, Q-Q plots, and the Shapiro-Wilk test and a violation of the assumption could necessitate data treatment, including log transformation was employed.

3.8.1.2. Multicollinearity Test

AML compliance costs, reporting requirements, monitoring systems, and enforcement procedures may be related, regression coefficients become unstable and difficult to interpret, making it difficult to distinguish how each of the variables predicts the outcome (Verma & Abdel-Salam, 2019). To establish whether the independent variables are excessively correlated with one another, multicollinearity was conducted. Multicollinearity was tested using Variance Inflation Factor (VIF) and tolerance. Generally, a VIF below 10 and tolerance above 0.10 indicate that serious multicollinearity is unlikely. If this assumption could be violated, the researcher could transform the data prior to conducting the regression test.

3.8.1.3. Heteroscedasticity Test

Usually, heteroscedasticity test is conducted to examine whether the variance of the regression residuals remains approximately constant across different predicted values of operational efficiency. This stability is important because a significant variation of this residual can affect the reliability of standard errors, significance tests, and confidence intervals (Flatt et. al., 2019). Scatterplot of standardized residuals against standardized predicted values. Ideally, a pattern that shows random spread of points around zero suggests homoscedasticity, while a funnel-shaped or systematic pattern may indicate heteroscedasticity. If this condition is violated, the researcher conducts necessary corrective measure.

3.9. Ethical Considerations

Ethical considerations are significant part of this study because of the importance of protecting the rights, privacy, dignity, and wellbeing of the participants. The researcher followed the relevant ethical requirements throughout the study, from data collection to the reporting of the findings. Prior to participation, participants were given clear information about the purpose of the research, what their participation would involve, and how the information they provide was to be used

(Palaskar, 2018). This was to give them an opportunity to ask questions and give informed consent before completing the questionnaire or taking part in an interview. The participation process was voluntary, and free from participant pressure or coercion to participate. Participants were also notified of their freedom to opt out of answering questions that they are not comfortable answering or pull out from the research at any point without any dire consequences. To maintain privacy, the researcher implemented measures to protect participants' confidentiality and anonymity. Respondents were not required to provide personal information such as their names or identification numbers. Instead, codes were used where necessary to protect their identities. Collected information was used strictly for academic purposes and only accessible to the researcher and authorized academic supervisors.

In addition, data was stored securely to prevent unauthorized access, loss, or misuse. Electronic files were protected using passwords, while any physical documents were kept in secure storage. After the study is completed, the data will be retained for the period required by the relevant institutional guidelines and then securely destroyed. These actions preserve the dignity, privacy, and fundamental rights of all participants throughout research process.

CHAPTER FOUR

FINDINGS AND DISCUSSION

4.1. Overview

This chapter outlines the findings and data analysis gathered during the research process**.** It includes descriptive statistics and inferences drawn from the regression analyses. From these results, the study shows how the chosen AML strategies influence the operational efficiency of commercial banks in Nairobi County.

4.2. Response Rate

The first part of the analysis entailed assessing the participant response rate. The findings for this analysis are presented in table 2 below;

Table 2 - Response Rate

Response	Frequency	Percent
Returned Questionnaires	184	96.8
Unreturned questionnaires	6	3.2
Total	190	100

Source: Research Data, 2026

Table 2 shows that out of 190 questionnaires distributed, 184 were returned, representing a 96.8% overall response rate. These 184 completed instruments formed the baseline dataset for demographic profiling and descriptive statistical analysis (Sections 4.4.1 to 4.4.9). However, because the instrument incorporated filtered modules tailored to specific functional mandates, and required complete, non-missing Likert responses across technical AML subsystems, subsequent correlation and regression analyses (Sections 4.5 to 4.7) were executed on filtered analytical subsets ranging from (n = 43) to (n = 48). Specifically, respondents who did not directly administer a given technical module (such as automated transaction monitoring or regulatory STR filing platforms) or who left module items incomplete were excluded via listwise filtering during inferential modeling to prevent perceptual distortion and preserve analytical precision.

4.3. Pilot Study Findings

To ensure data accuracy and instrument validity, the questionnaire underwent preliminary testing through a pilot study before official deployment. The data that was collected was analyzed to establish the Cronbach alpha. The findings for this analysis are presented in table 3 below;

Table 3 - Pilot Study Findings

Variable	S-VI	Cronbach alpha	Decision
Customer due diligence (CDD) system implementation	0.91	0.83	Accepted
Transaction monitoring system implementation	0.94	0.81	Accepted
Transaction reporting system implementation	0.90	0.79	Accepted
Staff training on AML	0.93	0.85	Accepted

Source: Research Data, 2026

The pilot study findings in table 3 indicate the degrees of validity and consistency for each measurement variable. The scale level validity indices (S-VI) ranged between 0.91 and 0.93. In the reliability analysis, that workforce training construct had the highest Cronbach alpha coefficient while the transaction reporting system implementation had the lowest coefficient. Since the coefficients were above 0.7, the constructs were considered good for study, paving way for actual data collection exercise

4.4. Descriptive Statistics

The study computed descriptive statistics on respondent demographics and the ratings of statements that define the variable constructs. This section presents a summary of these statistics.

4.4.1. Respondent Gender

The study computed the descriptive statistics for the respondent gender. The findings for this analysis are presented in table 4 below;

Table 4 - Respondent Gender

Gender	Frequency	Percent
Female	97	53
Male	87	47

Source: Research Data, 2026

The results that are presented in table 4 show that females constituted the majority of the respondents, with 97 (53%), while males accounted for 87 (47%). Despite the slightly higher

number of females, this suggests that there was a relatively balanced participant representation in terms of gender in the study.

4.4.2. Respondent Position in the Commercial Bank

The study computed the descriptive statistics for the respondent position in their respective commercial banks. The findings for this analysis are presented in table 5 below

Table 5 - Respondent Position in the Commercial Bank

Position	Frequency	Percent
Compliance Officer	25	13.6
Risk Manager	35	19.0
Finance Officer	39	21.2
Internal Auditor	48	26.1
Branch Manager	37	20.1

Source: Research Data, 2026

The findings in table 5 show that Internal Auditors constituted the largest proportion of respondents, with 48 (26.1%). They were followed by Finance Officers with 39 (21.2%) participants and Branch Managers with 37 (20.1%). Risk Managers accounted for 35 (19.0%) of the sample, while Compliance Officers represented the smallest proportion, with 25 (13.6%). This suggests that the participants were drawn from a range of key positions within the commercial bank, providing representation across compliance, risk management, finance, auditing, and branch management functions.

4.4.3. Duration that the Respondent has Worked in the Current Position

The study computed the descriptive statistics for the duration that the respondents had worked their current positions in their respective commercial banks. The findings for this analysis are presented in table 6 below.

Table 6 - Duration that the Respondent has Worked in the Current Position

Duration	Frequency	Percent
3 to 6 years	91	49.5%
7 to 10 years	40	21.7%
Less than 2 years	31	16.8%
More than 10 years	22	12.0%

Source: Research Data, 2026

The findings that are presented in table 6 demonstrates that about half of respondents had worked in their current position for 3 to 6 years, with 91 (49.5%). This group was followed by respondents who had worked in their position for 7 to 10 years, with 40 (21.7%) representation. At the same time, 31 (16.8%) of the participants had worked in their current position for less than 2 years. The smallest proportion had worked in their current position for more than 10 years, with 22 (12.0%) participants, suggesting that most respondents had substantial experience in their current positions.

4.4.4. Highest Level of Education of the Respondent

The study obtained the descriptive statistics for the highest academic qualification achieved for each participant. The findings for this analysis are presented in table 7 below

Table 7 - Highest Level of Education of the Respondent

Education level	Frequency	Percent
College education	7	3.8%
(University (Postgraduate)	62	33.7%
University (undergraduate)	115	62.5%

Source: Research Data, 2026

Table 7 results show that the majority of participants had attained university undergraduate education, with 115 (62.5%). This was followed by those who had university postgraduate education, with 61 (33.7%), while only 7 (3.8%) had attained college education, indicating that most banks employ people with university-level education to work in AML-linked departments.

The anti-money laundering systems strategies that had been adopted by the respondents' banks. All the respondents claimed that their banks had adopted intense observation of customer accounts, customer Due Diligence, installation of unique anti-money laundering reporting systems, suspicious

transaction monitoring systems and regular training of personnel to detect, flag any suspicious account activities as ways of countering money laundering through their banks.

4.4.5. Descriptive statistics for Customer Due Diligence

The study used the respondent ratings of various statements to calculate the descriptive statistics for the statements and the entire CDD construct. The findings for this analysis are presented in table 8 below;

Table 8 - Descriptive statistics for Customer Due Diligence

Statement	Mean	Std. Dev
My bank has integrated KYC systems for efficient collection and verification of customer information, such as identification documents and personal details	4.83	0.38
My bank has installed digital KYC systems, automated document verification, biometric identification, and integrated databases improve transaction processing speed, accuracy	4.68	0.47
My bank has integrated systems that identify and classify customers according to their risk levels	3.94	0.35
My bank has installed systems that for regularly reviewing customer risk profiles and monitoring changes in customer behavior	3.89	0.31
My bank has integrated systems that allow tracking source of funds, completeness of customer information	4.03	0.22
We have installed automated monitoring systems, alerts, and data analytics, to improve the speed and accuracy of transaction reviews.	4.02	0.13
My bank has adopted clear procedures for handling alerts and reporting suspicious account activities	4.03	0.16
Total Average	4.23	0.31

Source: Research Data, 2026

The results in table 8 indicate a high level of agreement regarding the implementation of Customer Due Diligence (CDD) practices in the banks. This is reflected by the overall mean score of 4.23 (standard deviation =0.31), which shows that the respondents were likely to agree or strongly disagree with the statements. The statement “the bank has integrated KYC systems for efficient collection and verification of customer information” had the highest score (mean= 4.83, standard deviation =0.38. This was followed by the statement “the use of digital KYC systems, automated document verification, biometric identification, and integrated databases, transaction processing speed, accuracy” which recorded a mean of 4.68 and a standard deviation of 0.47. The statement “integrated of systems for identifying and classifying customers according to their risk profile recorded a mean

of 3.94 and a standard deviation of 0.35, while systems for regularly reviewing customer risk profiles and monitoring changes in customer behavior registered the minimum mean score of 3.89, accompanied by a standard deviation of 0.31. The outcome suggest that the bank has relatively well-established CDD systems, particularly in customer information verification and digital KYC processes.

4.4.6. Descriptive statistics for Transaction Monitoring Systems

The study used the respondent ratings of various statements to calculate the descriptive statistics for the statements that describe implementation of transaction monitoring systems. The findings for this analysis are presented in table 9 below;

Table 9 - Descriptive statistics for Transaction Monitoring Systems

Statement	Mean	Std.Dev
My bank has integrated systems that provide customers with immediate notifications after their account transactions	4.69	0.10
My bank has integrated systems that identify unauthorized or unusual transactions and notify staff promptly	4.20	0.40
Our AML investigation systems instantly provide staff with timely access to transaction histories, customer profiles, risk ratings, and supporting documentation	4.10	0.34
My bank has integrated systems that allow prompt investigation of suspicious transactions enable the institution to identify and address potential risks quickly	3.97	0.18
Our integrated notification systems have automated communication do not alter the speed of service delivery	3.96	0.34
Accurate and reliable alerts ensure that customers receive correct information about transaction amounts, dates, and transaction types	4.56	0.35
We use of SMS, mobile banking applications, email, and other digital channels to deliver transaction prompts to both customers and staff efficiently	4.57	0.43
Total Average	4.35	0.28

Source: Research Data, 2026

Table 9 results above indicate a high level of participant agreement regarding the effectiveness of transaction monitoring systems in their banks. It can be established that the participants were likely to agree or highly agree, as shown by the high overall mean of 4.35 (SD = 0.28). The highest-rated statement was that “the bank has integrated automated systems that provide customers with immediate notifications after account transactions,” with a mean of 4.69 (SD = 0.10). On the other

hand, lowest-rated statement was that "integrated notification systems and automated communication do not alter the speed of service delivery," which recorded a mean of 3.96 (SD = 0.34). These findings suggest that suspicious transaction monitoring systems are well implemented in these banks, particularly in providing timely transaction notifications to customers.

4.4.7. Descriptive statistics Transaction Reporting Systems

The study used the participant ratings of various statements to calculate the descriptive statistics for the statements that describe implementation of transaction reporting systems by banks. The findings for this analysis are presented in table 10 below

Table 10 - Descriptive statistics Transaction Reporting Systems

Statement	Mean	Std Dev
We have clearly defined AML reporting procedures to help employees understand how, when, and to whom suspicious transactions should be reported	4.10	0.30
Out AML investigation systems provide staff with timely access to transaction histories, customer profiles, risk ratings, and supporting documentation	3.99	0.13
Our systems allow prompt reporting of identified suspicious transactions to respond quickly to potential financial crimes and regulatory risks	3.99	0.18
Our AML systems generate high-quality reports to reduce the need for repeated reviews, corrections, and requests for additional information	4.07	0.28
We have adopted efficient reporting platforms to facilitate the rapid preparation and submission of suspicious transaction reports	4.02	0.21
We have adopted standardized reporting formats, guidelines, and workflows ensure that AML reports are prepared and submitted consistently.	4.02	0.16
We have clear reporting procedures to reduce manual work, minimize errors, and improve the overall speed of compliance processes	4.01	0.18
We have adopted easily accessible reporting channels and appropriate systems enable staff to submit suspicious transaction reports quickly and securely.	4.00	0.15
Total Average	4.03	0.20

Source: Research Data, 2026

Table 10 results indicate a high level of agreement regarding AML reporting procedures, with an overall mean of 4.03 (SD = 0.20). The statement recording highest level of agreement was "the bank has clearly defined AML reporting procedures that help employees understand how, when, and to whom suspicious transactions should be reported," with a mean of 4.10 (SD = 0.30). The lowest-rated statements were that AML investigation systems provide staff with timely access to relevant information and that systems allow prompt reporting of identified suspicious transactions, both

recording a mean of 3.99 (SD = 0.13 and 0.18, respectively). Ideally, the outcome suggests that most commercial banks in Kenya have implemented clear and effective AML reporting procedures, despite the reduced poor perceptions of respondents on the timeliness of accessing relevant information and prompt reporting of suspicious transactions.

4.4.8. Descriptive Statistics for Regular Bank AML Staff Training

The study used the participant ratings of various statements to calculate the descriptive statistics for the statements that describe implementation of regular AML staff training by banks. The findings for this analysis are presented in table 11 below

Table 11 - Descriptive Statistics for Regular Bank AML Staff Training

Statement	Mean	Std. Dev
My bank conducts regular AML training to update staff on new AML requirements, regulatory changes, and emerging financial crime risks	4.45	0.61
My bank emphasizes practical and relevant AML training to improve employees' AML knowledge and skills	4.60	0.09
My bank's AML training procedure addresses gaps in the employees' actual responsibilities and current AML challenges effectively	4.14	0.37
It is mandatory for my bank's staff to attend regular refresher training on AML requirements and procedures	3.89	0.41
All staff involved in AML-related activities receive updates on emerging AML practices	4.10	0.37
Refresher training on procedures for identifying, and tracking suspicious account activities, reporting and resolving AML issues are effective	4.10	0.01
My bank evaluates the staffs' AML competence like promptly identifying risky account activities,	4.20	0.43
Staff know about procedures for identifying, and tracking suspicious account activities, reporting and resolving AML issues effectively	4.5	0.5
Total Average	4.20	0.38

Source: Research Data, 2026

The results in table 11 reveal a high level of agreement regarding AML staff training, with a total mean of 4.20 (SD = 0.38). The most highly-rated statement was that financial institutions emphasize practical and relevant AML training to improve employees' knowledge and skills, with a mean of 4.60 (SD = 0.09). The statement with the lowest rating was that which was speaking to compulsory staff attendance to regular refresher training on AML requirements and procedures, with a mean of 3.89 (SD = 0.41). Collectively, the specific findings underscore commercial bank emphasis on

provision of effective AML training to their staffs, particularly through practical and relevant training programs, although making this training mandatory for everyone needs strengthening.

4.4.9. Operational Efficiency Descriptive statistics

The study used the participant ratings of various statements to calculate the descriptive statistics for the statements that describe bank operational efficiency. As displayed in Table 12, the analytical findings are presented;

Table 12 - Operational Efficiency Descriptive statistics

Statement	Mean	Std.Dev
Adoption of AML procedures enabled my bank to process customer transactions within the required time	4.04	0.21
AML strategies have reduced the time required to identify and investigate suspicious transactions in my bank.	3.92	0.41
AML procedures have reduced errors in customer and transaction processing my bank.	4.03	0.24
My bank's AML systems reduce duplication of work among employees	3.88	0.28
My bank's AML strategies have improved staff productivity amidst handling compliance-related activities	3.98	0.33
My bank's AML procedures have reduced the operational costs associated with compliance activities.	4.48	0.03
My bank is able to handle increasing transaction volumes without significant delays.	4.42	0.57
My bank's AML systems and procedures facilitate quick access to customer and transaction information	4.05	0.32
My bank's AML processes enable employees to complete their duties more efficiently	4.85	0.36
Total Average	4.17	0.29

Source: Research Data, 2026

To facilitate subsequent correlation and linear regression modeling (Sections 4.5 through 4.7), the nine five-point Likert-scale items measuring the dependent variable, spanning operational cost efficiency, transaction processing efficiency, customer service efficiency, and risk management effectiveness, were aggregated by computing the arithmetic mean across all items for each respondent. This aggregation produced a single, continuous composite operational efficiency index (overall mean = 4.17, SD = 0.29) that captures the multidimensional operational performance of commercial banks in Nairobi County. Transforming the individual ordinal ratings into a reliable composite score minimized item-level measurement noise, satisfied the continuous outcome

assumption required for Ordinary Least Squares (OLS) regression, and ensured that all four efficiency dimensions were equally represented in evaluating the impact of Anti-Money Laundering (AML) practices.

4.5. Correlation Analysis

A Pearson correlation analysis was deployed to establish the association between research constructs. The findings for this analysis are presented in table 13 below;

Table 13 - Pearson Correlation Analysis Results

Variable						
Customer Due Diligence	Pearson Correlation	1				
	Sig. (2-tailed)					
	N	48				
AML transaction Monitoring	Pearson Correlation	-0.061	1			
	Sig. (2-tailed)	0.694				
	N	44	44			
Transaction reporting systems	Pearson Correlation	-0.188	-0.006	1		
	Sig. (2-tailed)	0.202	0.969			
	N	48	44	48		
Staff training on AML practices and procedures	Pearson Correlation	0.195	-0.238	0.123	1	
	Sig. (2-tailed)	0.210	0.125	0.431		
	N	43	43	43	43	
Bank Operational efficiency	Pearson Correlation	-0.482*	0.380*	0.328*	0.359*	1
	Sig. (2-tailed)	0.001	0.012	0.003	0.000	

N	48	43	44	48	48

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

Source: Research Data, 2026

The correlation results in Table 13 demonstrate statistically significant linear associations between all four Anti-Money Laundering (AML) dimensions and bank operational efficiency at the 5% significance level. Specifically, Customer Due Diligence exhibited a moderate, statistically significant negative correlation with operational efficiency ($r = -0.482$, $p = 0.001$). Conversely, AML Transaction Monitoring Systems ($r = 0.380$, $p = 0.012$), Transaction Reporting Systems ($r = 0.328$, $p = 0.003$), and Staff Training on AML ($r = 0.359$, $p = 0.000$) all demonstrated moderate, positive, and statistically significant correlations with operational efficiency. Furthermore, inter-correlations among the four independent variables were weak (r) ranging from (-0.238) to (0.195, $p > 0.05$), indicating an absence of collinearity concerns prior to regression modeling.

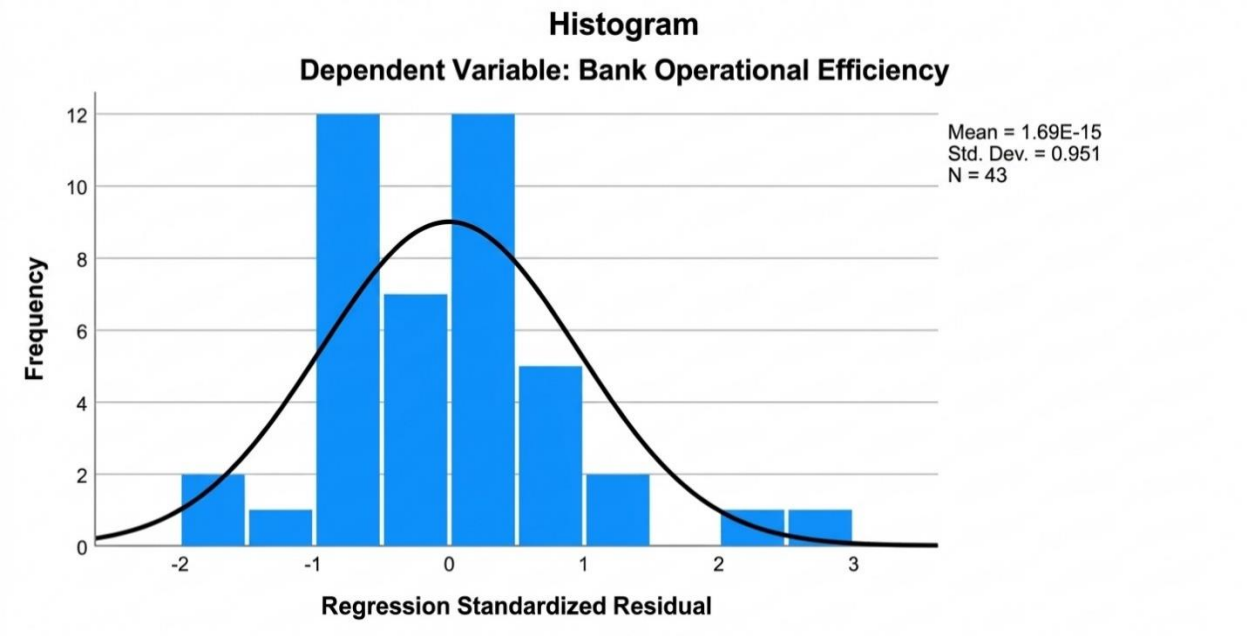
4.6. Regression analysis Results

Bivariate and multivariate Ordinary Least Squares (OLS) regression analyses were performed to establish how the four AML strategies influence operational efficiency in commercial banks. Prior to estimation, diagnostic tests were conducted to verify compliance with classical linear regression assumptions. Findings for this analysis is presented below;

4.6.1. Normality Test Results

Normality test was conducted using a histogram. The findings for the test are presented in figure 2 below;

Figure 2 - Normality Test Result



Source: Research Data, 2026

Figure 2 indicates that the standardized residuals approximate a symmetrical bell-shaped normal distribution centered around zero (Mean = 1.69 \times 10^{-15}, {SD} = (0.951), confirming that the assumption of normality was satisfied.

4.6.2. Multicollinearity Test Results

Multicollinearity among the predictor variables was examined using Tolerance and Variance Inflation Factor (VIF) statistics, as presented in Table 14.

Table 14 - Multicollinearity Statistics

Model	Tolerance	VIF
Customer due diligence systems	.917	1.091
Transaction monitoring systems	.943	1.061
Transaction reporting systems	.938	1.066
Regular Staff AML training	.885	1.130

Source: Research Data, 2026

Dependent Variable: Operational Efficiency

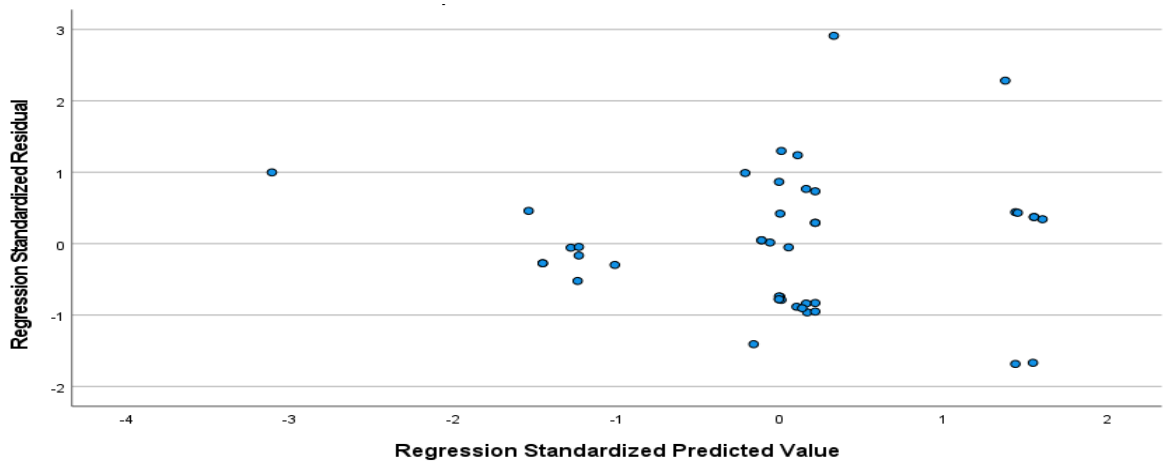
Table 14 presents the Variance Inflation Factor (VIF) and tolerance values. It can be established that the VIF values for all independent variables were below 5, while the tolerance values were above

0.20. These results suggest that multicollinearity assumption was not violated among independent variables, and the data was suitable for multiple regression analysis.

4.6.3. Heteroskedasticity Test Results

Heteroskedasticity assumption was tested by plotting standardized residuals against standardized predicted values. The findings for this analysis are presented in figure 3 below;

Figure 3 - Scatterplot for Regression Standardized predicted Values and Residuals



Source: Research Data, 2026

From figure 3, it can be established that the visual distribution of standardized residuals plotted against predicted metrics demonstrated a random distribution of residuals around zero. There was no discernible funnel-shaped pattern, suggesting that the assumption of constant error variance was not violated**.** Having established that assumptions of linear regression were not violated, the study proceeded to examining the effects of the four AML execution factors on commercial banks' operational efficiency.

4.7. Actual Regression Results for Various AML Strategies

In alignment with the modular design of the survey instrument, the bivariate and multivariate linear regression models presented in Sections 4.7.1 through 4.7.5 were estimated using filtered analytical subsets (n = 48) for Customer Due Diligence and AML Staff Training; (n = 44) for Transaction Reporting Systems; and (n = 43) for Transaction Monitoring Systems and the combined multivariate model. While all 184 returned questionnaires contributed to the descriptive findings, restricting the regression models to these filtered subsets (n = 43) to (48) ensured that causal inferences were grounded exclusively in complete datasets provided by specialists directly

responsible for operating or auditing each corresponding AML subsystem. Having established that assumptions of linear regression were not violated, the study proceeded to examining the effects of the four AML execution factors on commercial banks' operational efficiency. The findings for this analysis are presented below;

4.7.1. Influence of Customer Due Diligence on Operational Efficiency of Commercial Banks

A bivariate linear regression analysis was conducted to determine the influence of utilizing customer due diligence systems on the commercial banks operational efficiency. The model summary, ANOVA and regression coefficients are presented below;

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.482[a]	.232	.216	.10601

Source: Research Data, 2026

The regression results shown a positive relationship between customer due diligence system implementation and operational efficiency, with an R value of 0.482. The associated R Square value of 0.232 indicates that customer due diligence system implementation explains 23.2% of the variation in operational efficiency.

ANOVA[a]

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	.156	1	.156	13.924	.001[b]
Residual	.517	46	.011		
Total	.673	47			

Source: Research Data, 2026

The ANOVA results show that the regression model was statistically significant [$F(1,46) = 13.924$, $p < 0.05$). This indicates that customer due diligence system implementation by banks significantly explains variation in the banks' operational efficiency, and the regression model provided a statistically significant fit to the data.

Regression Coefficients

Model	B	Std. Error	t	Sig.
(Constant)	1.830	.156	11.712	.000
Customer due diligence systems	-.487	.130	-3.731	.001

Source: Research Data, 2026

The regression coefficients indicate that customer due diligence systems have a statistically significant negative effect on operational efficiency, with a coefficient of $B = -0.487$ ($SE = 0.130$, $t = -3.731$, $p<0.05$).

The associated simple linear regression model is as follows;

$Y=-0.487X + \varepsilon$

Where Y represents commercial bank operational efficiency, X represents customer due diligence and ε represents the error term. From research findings, the null hypothesis was rejected. This is because the study found that CDD have a statistically significant influence on operational efficiency. In particular a one-unit rise in customer due diligence systems is associated with a 0.487-unit decrease in operational efficiency, holding other factors constant. These results are consistent with Al Qudah et al.2024) which shows that stringent AML enforcement can adversely affect the performance of commercial banks through increased operation burdens.

4.7.2. Influence of Transaction Monitoring Systems on Operational Efficiency of Commercial Banks

A bivariate linear regression analysis was conducted to determine the influence of utilizing transaction monitoring systems on the commercial banks operational efficiency. The model summary, ANOVA and regression coefficients are presented below;

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.380[a]	.145	.124	.25220

Source: Research Data, 2026

The mode summary indicates a moderate positive relationship between transaction monitoring systems and operational efficiency, with an R value of 0.380. The associated R Square value of 0.145 indicates that transaction monitoring systems explain 14.5% of the variation in operational efficiency.

ANOVA[a]

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	1.441	1	.441	22.5156	.012[b]
Residual	2.608	41	.064		
Total	3.049	42			

Source: Research Data, 2026

The ANOVA results indicate that the regression model assessing the influence of transaction monitoring systems on commercial banks' operational efficiency is statistically significant, with an [$F(1, 41)= 22.51.6$ $p<0.05$], implying that transaction monitoring systems have a statistically significant influence on operational efficiency and that the regression model provides a significant fit

Model	B	Std. Error	t	Sig.
(Constant)	.586	.354	1.655	.106
Transaction monitoring systems	.802	.304	2.633	.012

Source: Research Data, 2026

The regression coefficients indicate that transaction monitoring systems have a positive and statistically significant influence on operational efficiency, with a coefficient of $B = 0.802$ ($SE = 0.304$, $t = 2.633$, $p <0.05$). The subsequent simple linear regression model is as follows;

$Y=-0.802X + \varepsilon$

Where Y represents commercial bank operational efficiency, X represents transaction monitoring systems and ε represents the error term. Consequently, the null hypothesis was rejected. This was necessitated by the fact that one-unit increase in implementation of transaction monitoring systems there was a 0.802 unit increase in operational efficiency of commercial banks.

4.7.3. Influence of Transaction Reporting Systems on Operational Efficiency

A bivariate linear regression analysis was conducted to determine the influence of utilizing suspicious transaction reporting systems commercial bank operational efficiency. To summarize, ANOVA and regression coefficients are presented below;

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.328[a]	.108	.086	.18537

Source: Research Data, 2026

The regression model summary results indicate a positive relationship between transaction reporting systems and operational efficiency, with an R value of 0.328. The associated R Square value of 0.108 indicates that transaction reporting systems implementation explain 10.8% of the variation in operational efficiency.

ANOVA[a]

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	1.194	1	2.194	35.117	.003[b]
Residual	1.443	42	.034		
Total	1.617	43			

Source: Research Data, 2026

The ANOVA results indicate that the regression model assessing the influence of transacti reporting systems on commercial banks' operational efficiency is statistically significant, with [F(1,42) = 35.12, p < 0.05], depicting that transaction reporting systems have a statistica significant influence on operational efficiency and that the regression model provides a significa fit.

Regression Coefficients

Model		B	Std. Error	t	Sig.
1	(Constant)	.933	.259	3.597	.001

AML transaction reporting systems	.485	.216	2.250	.0034

Source: Research Data, 2026

The regression coefficients indicate that AML transaction reporting systems have a positive and statistically significant influence on operational efficiency, with a coefficient of B = 0.485 (SE = 0.216, t = 2.250, p <0.05). The subsequent simple linear regression model is as follows;

$Y=-0.485X + \varepsilon$

Where Y represents commercial bank operational efficiency, X represents AML transaction reporting systems and ε represents the error term. Th null hypothesis was thus rejected. This is because the findings established that an increase in one-unit of AML transaction reporting systems there is 0.485-unit increase in operational efficiency

4.7.4. Influence of AML Staff Training on Bank Operational Efficiency

A bivariate linear regression analysis was conducted to determine the influence of regular AML workforce training on the commercial banks' operational efficiency. The model summary, ANOVA and regression coefficients are presented below;

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.359[a]	.129	.297	.24587

Source: Research Data, 2026

The model summary results indicate a moderate positive relationship between AML workforce training and operational efficiency, with an R value of 0.359. The associated R Square value of 0.129 indicates that AML workforce training explains 12.9% of the variation in operational efficiency of commercial banks.

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	1.263	1	2.263	44.3830	.000[b]
	Residual	2.781	46	.060		
	Total	4.044	47			

Source: Research Data, 2026

The ANOVA results indicate that the regression model assessing the influence of AML workforce training on operational efficiency was statistically significant [$F(1, 46) = 44.38$, ($p < 0.05$], indicating that the regression model provides a significant fit.

Model		B	Std. Error	t	Sig.
1	(Constant)	-.219	.513	-.427	.671
	Workforce Training on AML	1.641	.359	4.571	.000

Source: Research Data, 2026

The regression coefficients shown that AML workforce training had a positive and statistically significant influence on operational efficiency, with a coefficient of $B = 1.641$ ($SE = 0.359$, $t = 4.571$, $p < 0.05$). The subsequent simple linear regression model is as follows;

$Y = -1641X + \varepsilon$

Where Y represents commercial bank operational efficiency, X represents AML transaction reporting systems and ε represents the error term. This implies that the null hypothesis should be rejected. The findings established that a one-unit increase in AML workforce training is associated with a 1.641-unit increase in operational efficiency. Since the p-value is below 0.05, the relationship is statistically significant.

4.7.5. Multivariate Linear Regression Analysis Results

A multiple linear regression analysis was conducted to determine the joint influence of utilizing customer due diligence systems, account monitoring systems, suspicious transaction reporting systems and regular AML workforce training on the commercial banks operational efficiency. The model summary, ANOVA and regression coefficients are presented below;

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.547[a]	.299	.234	.15582

Source: Research Data, 2026

From the model summary, R=0.547, and an R-squared of 0.299, suggesting that collectively, the for-predictor variables explain 29.9% of the variance in the commercial bank efficiency.

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	6.446	4	1.6115	67.14593	.000[b]
	Residual	1.044	43	.024		
	Total	7.490	47			

Source: Research Data, 2026

According to ANOVA results, the overall regression model is statistically significant, with an [F(4, 43)=67.146, $p < 0.05$], suggesting that the four predictor variables, when considered jointly, the regression model provides a significant fit.

Model		B	Std. Error	t	Sig.
1	(Constant)	.831	.574	1.447	.155
	Customer due diligence systems	-.826	.310	-2.666	.011
	Transaction monitoring systems	.494	.229	2.160	.016
	Transaction reporting systems	.214	.277	.773	.014
	Regular Staff training on AML procedures	.353	.118	2.984	.004

Source: Research Data, 2026

The multiple regression results indicate that the four AML strategies have significant effects on operational efficiency. Customer due diligence systems had a significant negative effect on operational efficiency ($B = -0.826$, $SE = 0.310$, $t = -2.666$, $p = 0.011$). Transaction monitoring systems had a significant positive effect on operational efficiency ($B = 0.494$, $SE = 0.229$, $t = 2.160$, $p = 0.016$). Similarly, suspicious transaction reporting systems had a positive and statistically significant effect ($B = 0.214$, $SE = 0.277$, $t = 0.773$, $p = 0.014$). Regular workforce training on AML procedures also had a positive and statistically significant effect on operational efficiency ($B = 0.353$, $SE = 0.118$, $t = 2.984$, $p = 0.004$). The subsequent regression model is as follows;

$$Y=-0.286X_1, 0.494X_2+0.214X_3+0.353X_4 + \varepsilon$$

Where Y represents commercial bank operational efficiency, X_1 represents customer due diligence, X_2 represents suspicious transaction monitoring systems, X_3 represents suspicious transaction

reporting systems and X_4 represents regular workforce training on AML and ε represents the error term.

4.8. Discussion of Findings

The study examined the influence of anti-money laundering (AML) compliance frameworks on operational efficiency in commercial banks, focusing on customer due diligence (CDD), transaction monitoring, transaction reporting, and AML staff training among commercial banks in Nairobi County. The study was based on primary data based on perceptions of respondents who were drawn from key banking positions, including compliance, risk management, finance, internal auditing, and branch management. These personnel were considered as participants because of their direct involvement in day-to-day AML activities (Ringgaard, Bukh & Sandalgaard, 2025). Descriptive analysis revealed that a significant percentage of these respondents have considerable experience in their current positions and possessed university-level education. This backs these verdicts as the one informed by persons with relevant professional knowledge and experience in banking operations, risk management, and compliance activities.

Ideally, the study findings indicate that AML practices are well adopted among these institutions and significantly influence operational efficiency. However, the findings also suggest that their association with operational efficiency differs. Transaction monitoring systems were found to be strongly implemented by commercial banks as highlighted by the strong agreement with the statement that these institutions use systems which can identify unusual or unauthorized transactions and generate instant notifications for those which look suspicious. Regression analysis showed that such monitoring systems had a positive and statistically significant association with operational efficiency. This supports the idea that automated monitoring systems, alerts, transaction analytics, and timely access to customer and transaction information quicken identification of potential risks while reducing the time and resources required for manual AML monitoring processes.

The findings on transaction reporting systems showed a deep establishment of clear reporting procedures, standardized reporting formats, reporting platforms, and accessible channels for submitting suspicious transaction notifications. Terer, Mwangi and Omagwa (2024) who established that implementation of transaction reporting systems increases the overall financial performance of commercial banks findings corresponds with the study. While the study focused on profitability, its findings reflected enhanced efficiency. These transaction reporting systems had a positive and

statistically significant influence on operational efficiency. This suggests that having well-designed reporting procedures is crucial for enhanced operational efficiency in banks because it reduces unnecessary delays, minimizes errors, improves information flow, and facilitate timely responses to potential financial-crime risks.

Nevertheless, the study also found that AML staff training is well implemented by these commercial banks. Most of the banks emphasize practical and relevant training designed to improve employees' AML competencies and technical expertise required to identify and mitigate financial crime activities. The regression findings further demonstrate that AML staff training had a positive and statistically significant influence on operational efficiency, consistently with Terer (2025) who established that staff training on AML enhances the profitability of commercial banks, signaling enhanced efficiency through this AML initiative. This reveals that commercial banks are determined to create a body of competent and well-trained employees to enhance their capability of identifying suspicious activities. These trainings include those that enable the commercial bank personnel to interpret alerts, investigate potential risks, prepare reports, and perform AML compliance-related duties efficiently. Through this continuous training, commercial bank employees sustain their responsiveness to emerging AML risks and regulatory requirements.

The study further found that implementation of CDD is established. This was confirmed by the participants' agreement with statements showing that their banks have transaction management systems that allow the collection and verification of customer information and the use of digital KYC systems, automated document verification, biometric identification, and integrated databases. However, unlike other AML strategies, customer due diligence exhibited a statistically significant negative influence on operational efficiency. These results Match, Dzanga's (2019) and Terer's (2025) studies which established that CDD strategies like KYC can lead to operational inefficiency through additional expenses. This suggests that although CDD is essential for regulatory compliance and risk management, its activities, including extensive customer verification, documentation, risk classification, and periodic reviews may increase administrative workload and processing requirements, potentially reducing operational efficiency. This occurs mainly when the streamlining of such processes is inadequate.

The multiple regression model was statistically significant, demonstrating that the AML strategies jointly influence operational efficiency. These results match, Mwai, Kuria and Musili's (2025) studies

which established that commercial banks benefit from enhanced efficiency when they employ preventive strategies against risks. This is associated with the reduced fraud investigation costs, disruption and financial loses. The negative influence of CDD on operational efficiency remained in the multivariate linear regression. From the study outcome, (except for CDD), it can be inferred that that AML compliance does not necessarily interfere with operational efficiency. Rather, appropriately designed compliance mechanisms contribute to efficiency by strengthening information systems, improving monitoring, standardizing procedures, and enhancing employee competence.

From the perspective of compliance theory, the findings demonstrate that implementing AML systems is highly embraced among commercial banks that operate in Nairobi. These systems enable commercial banks to meet regulatory requirements and manage financial crime risks. A larger percentage of these systems are also beneficial to the banks because they improve the operational efficiency. This aligns with the compliance theory because it emphasizes how compliance practices become increasingly effective when they are integrated into routine banking processes and supported by appropriate technologies and procedures. Findings are explained by Agency theory whereby it further explains by depicting the role of AML controls as a crucial component of commercial banks' initiatives to reducing information asymmetry between the money launderers who are crime perpetrators and commercial banks as the main agents of curbing these fraudulent activities. As owners of AML systems, banks act as agents for strengthening monitoring, improving accountability, and limiting opportunities for inappropriate behavior.

CHAPTER FIVE:

CONCLUSION AND RECOMMENDATIONS

5.1. Overview

The primary objective of this study was to evaluate the influence of Anti-Money Laundering (AML) practices on the operational efficiency of commercial banks operating in Nairobi County, Kenya, following the 2023 Proceeds of Crime and Anti-Money Laundering Act (POCAMLA) reforms. Specifically, the study examined the individual and joint effects of Customer Due Diligence (CDD) systems, transaction monitoring systems, transaction reporting systems, and regular AML staff training on bank operational efficiency. This chapter presents a summary of the empirical findings, key conclusions, institutional and policy recommendations, and areas for further research.

5.2. Summary of Findings

5.2.1. The influence of Customer Due diligence systems on Commercial banks' Operational efficiency.

Descriptive results confirmed that Customer Due Diligence (CDD) practices were widely adopted across commercial banks in Nairobi County (overall mean = 4.23, SD = 0.31), particularly in identity verification and digital Know-Your-Customer (KYC) onboarding. However, inferential regression analysis demonstrated that CDD systems exerted a statistically significant negative effect on bank operational efficiency in both the bivariate model ($R = 0.482$, $R^2 = 0.232$, $B = -0.487$, $t = -3.731$, $p = 0.001$) and the combined multivariate model ($B = -0.826$, $t = -2.666$, $p = 0.011$). Accounting for 23.2% of the separate variance in operational efficiency, these findings indicate that while CDD is essential for regulatory compliance, repetitive document checks, manual periodic reviews, and rigid onboarding procedures create administrative friction and processing delays that reduce operational efficiency when inadequately streamlined.

5.2.2. Influence of Transaction Monitoring Systems on Commercial banks' Operational efficiency.

Commercial banks exhibited strong adoption of automated transaction monitoring systems (overall mean = 4.35, SD = 0.28), particularly in delivering real-time customer alerts and notifying staff of unusual account activity. Both bivariate regression ($R = 0.380$, $R^2 = 0.145$, $B = 0.802$, $t = 2.633$, $p = 0.012$) and multivariate regression ($B = 0.494$, $t = 2.160$, $p = 0.016$) established a statistically

significant positive relationship between transaction monitoring systems and operational efficiency. Explaining 14.5% of standalone efficiency variance, automated monitoring tools improve operational performance by accelerating anomaly detection, reducing manual surveillance workloads, and enabling rapid risk investigation.

5.2.3. Influence of Transaction Reporting Systems on Commercial banks' Operational efficiency.

The study found that standardized AML transaction reporting procedures and digital submission platforms were well established across the surveyed banks (overall mean = 4.03, SD = 0.20). Regression analysis confirmed that transaction reporting systems had a statistically significant positive influence on operational efficiency in both the bivariate model ($R = 0.328$, $R^2 = 0.108$, $B = 0.485$, $t = 2.250$, $p = 0.003$) and the multivariate model ($B = 0.214$, $t = 0.773$, $p = 0.014$). This variable explains 10.8% variance, structured reporting channels and standardized Suspicious Transaction Report (STR) workflows enhance operational efficiency by minimizing reporting errors, eliminating repeated regulatory follow-ups, and speeding up compliance turnaround times.

5.2.4. Influence of Regular AML Staff Training on Commercial banks' Operational efficiency.

Regular and practical AML staff training was strongly implemented across Nairobi's commercial banks (overall mean = 4.20, SD = 0.38). Regression results revealed that regular AML workforce training exerted a statistically significant positive impact on operational efficiency in both the bivariate model ($R = 0.359$, $R^2 = 0.129$, $B = 1.641$, $t = 4.571$, $p = 0.000$) and the multivariate model ($B = 0.353$, $t = 2.984$, $p = 0.004$), accounting for 12.9% of specific variance. Practical, competency-based training equips staff to interpret system alerts accurately, investigate flagged transactions swiftly, and execute compliance duties with fewer errors and minimal operational bottlenecks.

5.3. Conclusion

Based on the empirical regression outputs, the study concludes that Anti-Money Laundering (AML) compliance does not inherently impose a negative trade-off on commercial bank operational efficiency; rather, its operational impact depends critically on technological automation and workflow integration.

First, automated and human-capital AML practices positively drive institutional performance. Transaction monitoring systems ($B = 0.494$, $p = 0.016$), standardized transaction reporting systems ($B = 0.214$, $p = 0.014$), and regular AML staff training ($B = 0.353$, $p = 0.004$) all act as statistically significant positive drivers of operational efficiency. When supported by automated alert generation,

structured reporting formats, and continuous staff upskilling, AML frameworks streamline internal controls, reduce manual duplication, and accelerate transaction processing.

Secondly, un streamlined Customer Due Diligence negatively impacts operational efficiency. Unlike monitoring, reporting, and training, Customer Due Diligence (CDD) systems exert a statistically significant negative influence on operational efficiency in both standalone (B = -0.487, p = 0.001) and joint (B = -0.826, p = 0.011) models. Intensive onboarding verification, repetitive customer profiling, and manual periodic reviews introduce procedural bottlenecks and administrative overhead that slow down front-office service delivery unless integrated seamlessly into core banking workflows.

Finally, collaborative implementation maximizes operational gains across banking institutions. Jointly, the four AML practices explain 29.9% ($R^2 = 0.299$, $F(4, 43) = 67.146$, $p = 0.000$) of the total variance in commercial bank operational efficiency, substantially outperforming any single AML intervention implemented in isolation. Commercial banks achieve optimal efficiency when technological monitoring and reporting platforms are paired with continuous staff training and re-engineered CDD processes.

5.4. Recommendations

For commercial bank executives and Chief Operations Officers, operational strategy should prioritize eliminating procedural bottlenecks while scaling automated and human-capital controls. To reverse the negative efficiency impact of Customer Due Diligence (B = -0.826), leadership should replace manual identity checks with end-to-end digital KYC onboarding, direct Application Programming Interface (API) links to national identity registries, and risk-tiered review schedules that free compliance staff to focus on high-risk accounts. Simultaneously, to maximize the positive efficiency gains of transaction monitoring (B = 0.494) and staff training (B = 0.353), banks should deploy machine learning analytics to calibrate monitoring rules and curb false-positive alerts, while enforcing compulsory quarterly, simulation-based AML refresher training tailored to branch, risk, audit, and compliance teams.

Financial Reporting Centre (FRC), regulatory modernization should focus on seamless digital data exchange and targeted intelligence sharing. Building on the positive efficiency effect of standardized reporting platforms (B = 0.214), the FRC should expand direct system-to-system API reporting

portals with commercial banks' core AML infrastructure, incorporating automated data validation and real-time filing feedback to eliminate manual re-keying and incomplete Suspicious Transaction Reports (STRs). In addition, publishing regular, Kenya-specific money laundering typology advisories, covering mobile money, digital banking, and cross-border trade, will enable banks to fine-tune their detection parameters and avoid unnecessary alert investigations.

Supervisory reforms should address the structural compliance costs that weigh down bank operations under Central Bank of Kenya (CBK). Recognizing that rigid, uniform CDD mandates erode operational efficiency, the CBK should update its prudential guidelines to promote proportionate, risk-based enforcement that permits simplified digital due diligence for low-risk retail customers while concentrating enhanced scrutiny on high-risk profiles. Furthermore, the CBK, in partnership with the Kenya Bankers Association (KBA), should spearhead a centralized, consent-based industry KYC utility where licensed banks can securely verify pre-validated customer credentials, substantially reducing duplicated verification expenses and onboarding delays across all 38 commercial banks.

5.5. Areas for Further Research

Because the four AML practices examined in this study jointly explain 29.9% ($R^2 = 0.299$) of the variance in commercial bank operational efficiency, future studies should investigate the institutional, technological, and macroeconomic factors accounting for the remaining 70.1% of unexplained variance, such as core banking software architecture, bank tier size, regulatory audit frequency, and cybersecurity investments. Additionally, future researchers should conduct longitudinal or mixed-methods case studies specifically evaluating how digital KYC utilities and artificial intelligence re-engineering can convert Customer Due Diligence from an operational bottleneck into an efficiency enhancer.

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APPENDIX I: QUESTIONNAIRE

(Target respondents: *Branch Managers, Compliance Officers, Risk Managers, Internal Auditors, Finance Officers*)

Greetings,

Thank you for taking time to participate in this research study.

My name is **Fridah Kiende Ithima.** I am a Master's of Business Administration student at The Open University of Kenya. I am conducting research to explore the influence of Anti-Money Laundering (AML) practices on the operational efficiency of commercial banks in Nairobi County, Kenya. Specifically, I am interested in investigating how the commercial bank's use of customer due diligence systems, reporting systems, suspicious transaction monitoring systems and anti-money laundering staff training procedures, influence the efficiency of commercial bank operations in Nairobi County.

I pledge to take personal responsibility in maintaining utmost confidentiality of the information that you provide during this exercise. This includes masking your identity to maintain high secrecy of your responses, and ensuring that all information that you submit is used exclusively for the purposes of this study and nothing else. Your feedback will give me the insights and experiences about this subject and will play a key role in building knowledge on the impacts of anti-money laundering practices to commercial banks.

This interview is short and will take approximately 15 minutes. Feel free to answer the questions and seek clarification on any question that you consider too complex. Once again, thank you for your participation.

SECTION A: BACKGROUND INFORMATION

1. Please indicate your gender

   Male { }

   Female { }

2. Please indicate your position in the Bank

   1. Compliance Officer
   2. Risk Manager
   3. Finance Officer
   4. Internal Auditor
   5. Branch Manager

   Other (Specify)

3. Please Indicate how long have you been working in this position?

   Less than 2 years [ ]

   3 to 6 years [ ]

   7 to 10 years [ ]

   Above 10 years [ ]

4. What is your highest level of education?

   Secondary level [ ]

   College [ ]

   University [ ]

   Postgraduate [ ]

5. Kindly tick the anti-money laundering practices that have been adopted by your bank? *Tick all that applies, you are also encouraged to write any additional strategy that has been adopted in your organization.*

   a. Enhanced Customer Due Diligence
   b. Anti-money laundering reporting systems
   c. Transaction monitoring systems
   d. Regular training of Staff to detect, flag and counter money laundering

e. Others (Please Specify) ……...

6. Kindly tick the anti-money laundering Practices that have been most impactful your bank? *Tick all that applies, you are also encouraged to write any additional strategy that has been adopted in your organization.*
   a. Enhanced Customer Due Diligence
   b. Anti-money laundering reporting systems
   c. Transaction monitoring systems
   d. Regular training of Staff to detect, flag and counter money laundering
   e. Others (Please Specify) ……...

SECTION.B

AML-1. AML CUSTOMER DUE DILIGENCE

Please rate your level of agreement or disagreement with the following statements by ticking in the appropriate box **(where 5-Strongly Agree, 4 Agree 3 Neutral, 2 Disagree, 1 Strongly Disagree)**

Statement	**1**	**2**	**3**	**4**	**5**
My bank has integrated systems for efficient collection and verification of customer information, such as identification documents and personal details					
My bank has installed digital KYC systems, automated document verification, biometric identification, and integrated databases can improve processing speed, accuracy					
My bank has integrated systems that identify and classify customers according to their risk levels					
My bank has installed systems that for regularly reviewing customer risk profiles and monitoring changes in customer behavior					
My bank has integrated systems that allow tracking source of funds, completeness of customer information					
We have installed automated monitoring systems, alerts, and data analytics, to improve the speed and accuracy of transaction reviews.					

My bank has adopted clear procedures for handling alerts and reporting suspicious account activities					

SECTION.C

AML-2. TRANSACTION MONITORING SYSTEMS

Please rate your level of agreement or disagreement with the following statements by ticking in the appropriate box **(where 5-Strongly Agree, 4 Agree 3 Neutral, 2 Disagree, 1 Strongly Disagree)**

Statement	1	2	3	4	5
My bank has integrated systems that provide customers with immediate notifications after their account transactions					
My bank has integrated systems that identify unauthorized or unusual transactions and notify staff promptly					
Our AML investigation systems instantly provide staff with timely access to transaction histories, customer profiles, risk ratings, and supporting documentation					
My bank has integrated systems that allow prompt investigation of suspicious transactions enables the institution to identify and address potential risks quickly					
Our integrated notification systems have automated communication that does not alter the speed of service deliver					
Accurate and reliable alerts ensure that customers receive correct information about transaction amounts, dates, and transaction types					
We use of SMS, mobile banking applications, email, and other digital channels to deliver transaction prompts to both customers and staff efficiently					

SECTION.D

AML-3. TRANSACTION REPORTING SYSTEMS

Please rate your level of agreement or disagreement with the following statements by ticking in the appropriate box **(where 5-Strongly Agree, 4 Agree 3 Neutral, 2 Disagree, 1 Strongly Disagree)**

Statement	1	2	3	4	5
We have clearly defined AML reporting procedures to help employees understand how, when, and to whom suspicious transactions should be reported.					
Our AML investigation systems provide staff with timely access to transaction histories, customer profiles, risk ratings, and supporting documentation					
Our systems allow prompt reporting of identified suspicious transactions to respond quickly to potential financial crimes and regulatory risks					
Our AML systems generate high-quality reports to reduce the need for repeated reviews, corrections, and requests for additional information					
We have adopted efficient reporting platforms to facilitate the rapid preparation and submission of suspicious transaction reports					
We have adopted standardized reporting formats, guidelines, and workflows ensure that AML reports are prepared and submitted consistently.					
We have clear reporting procedures to reduce manual work, minimize errors, and improve the overall speed of compliance processes					
We have adopted easily accessible reporting channels and appropriate systems enable staff to submit suspicious transaction reports quickly and securely.					

SECTION.E

AML-4. AML STAFF TRAINING PROCEDURES

Please rate your level of agreement or disagreement with the following statements by ticking in the appropriate box **(where 5-Strongly Agree, 4 Agree 3 Neutral, 2 Disagree, 1 Strongly Disagree)**

We conduct regular AML training so that employees remain updated on AML requirements, regulatory changes, internal procedures, and emerging financial crime risks	1	2	3	4	5
We emphasize practical and relevant training to improve employees' knowledge and skills, enabling them to identify suspicious activities, follow reporting procedures, and resolve compliance issues more effectively.					
Our AML training addresses gaps in the employees' actual responsibilities and current AML challenges.					
Our staff receive regular refresher training on AML requirements and procedures.					
All staff involved in AML-related activities receive updates on emerging AML practices and procedures.					
We evaluate the AMLstaff for competence in identifying risks promptly, and following AML procedures, reducing errors, delays, and the need for repeated work					

SECTION.F

AML-5. BANK'S OPERATIONAL EFFICIENCY

Please rate your level of agreement or disagreement with the following statements by ticking in the appropriate box **(where 5-Strongly Agree, 4 Agree 3 Neutral, 2 Disagree, 1 Strongly Disagree)**

Statement	1	2	3	4	5
Adoption of AML practices enabled my bank to process customer transactions within the required time					
AML practices have reduced the time required to identify and investigate suspicious transactions in my bank.					
AML procedures have reduced errors in customer and transaction processing my bank.					
My bank's AML systems reduce duplication of work among employees					
My bank's AML practices have improved staff productivity amidst handling compliance-related activities.					
My bank is able to handle increasing transaction volumes without significant delays.					
A My bank's ML procedures have reduced the operational costs associated with compliance activities.					
My bank's AML processes enable employees to complete their duties more efficiently					
My bank's AML systems and procedures facilitate quick access to customer and transaction information.					

APPENDIX II: LIST OF LICENSED COMMERCIAL BANKS IN KENYA

TIER I BANKS (Large Banks)

1. Absa Bank Kenya PLC
2. Co-operative Bank of Kenya Ltd
3. Equity Bank Kenya Ltd
4. KCB Bank Kenya Ltd
5. NCBA Bank Kenya PLC
6. Standard Chartered Bank Kenya Ltd
7. Diamond Trust Bank Kenya Ltd
8. I&M Bank Ltd

TIER II BANKS (Medium Banks)

9. Stanbic Bank Kenya Ltd
10. Bank of Africa Kenya Ltd
11. Bank of Baroda (Kenya) Ltd
12. Citibank N.A. Kenya
13. Credit Bank PLC
14. Ecobank Kenya Ltd
15. Family Bank Ltd
16. Guaranty Trust Bank Kenya Ltd
17. Housing Finance Company (HFC Ltd)
18. National Bank of Kenya Ltd
19. Prime Bank Ltd
20. SBM Bank Kenya Ltd
21. Sidian Bank Ltd
22. United Bank for Africa (Kenya) Ltd

TIER III BANKS (Small Banks)

23. Access Bank Kenya PLC
24. African Banking Corporation (ABC Bank)
25. Bank of India Kenya Ltd
26. Consolidated Bank of Kenya Ltd
27. Development Bank of Kenya Ltd
28. Dubai Islamic Bank Kenya Ltd
29. First Community Bank Ltd
30. Guardian Bank Ltd
31. Gulf African Bank Ltd
32. Habib Bank AG Zurich
33. Kingdom Bank Ltd
34. Middle East Bank (Kenya) Ltd
35. M-Oriental Bank Ltd
36. Paramount Bank Ltd
37. Spire Bank Ltd
38. Victoria Commercial Bank PLC

APPENDIX III: RESEARCH PERMIT

OPEN UNIVERSITY OF KENYA

OFFICE OF THE DEAN

SCHOOL OF BUSINESS & ECONOMICS

REF: OUK/SBE/01 VOL. 1/001 18th August 2026

The Director General
National Commission for Science, Technology and Innovation (NACOSTI)
P.O. Box 30623–00100
Nairobi, Kenya

Dear Sir/Madam,

RE: REQUEST FOR ISSUANCE OF A RESEARCH PERMIT TO FRIDAH KIENDE ITHIMA (REG. NO. BE61/80191/2024)

This is to introduce **Ms. Fridah Kiende Ithima**, Registration Number **BE61/80191/2024**, who is a duly registered student pursuing a **Master of Business Administration (MBA)** at the Open University of Kenya.

Ms. Ithima successfully defended her research proposal entitled **"Anti-Money Laundering Practices and Financial Performance in the Kenyan Banking Industry: A Case of Commercial Banks in Nairobi County"** and has been authorized by the University to proceed with data collection under the supervision of **Dr. Robert Ondunga**.

The University requests the **National Commission for Science, Technology and Innovation (NACOSTI)** to consider her application and issue a research permit to facilitate the conduct of the approved study.

Any assistance accorded to the student in facilitating the successful completion of this study is greatly appreciated.

Yours faithfully,

PROF. JANE SANG, CPA
DEAN, SCHOOL OF BUSINESS AND ECONOMICS
Copy to: Deputy Vice chancellor (Academic Affairs)

REPUBLIC OF KENYA

NATIONAL COMMISSION FOR SCIENCE,TECHNOLOGY & INNOVATION

Ref No: **555586**

Date of Issue: **31/August/2026**

RESEARCH LICENSE



This is to Certify that Ms.. FRIDAH KIENDE ITHIMA of The Open University, has been licensed to conduct research as per the provision of the Science, Technology and Innovation Act, 2013 (Rev.2014) in Nairobi on the topic: ANTI-MONEY LAUNDERING PRACTICES AND FINANCIAL PERFORMANCE IN THE KENYAN BANKING INDUSTRY (A CASE OF COMMERCIAL BANKS IN NAIROBI COUNTY) for the period ending : 31/August/2027.

License No: **NACOSTI/P/26/4195663**

555586

Applicant Identification Number

Ag. Director General
NATIONAL COMMISSION FOR SCIENCE,TECHNOLOGY & INNOVATION

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See overleaf for conditions

THE SCIENCE, TECHNOLOGY AND INNOVATION ACT, 2013 (Rev. 2014)

Legal Notice No. 108: The Science, Technology and Innovation (Research Licensing) Regulations, 2014

The National Commission for Science, Technology and Innovation, hereafter referred to as the Commission, was the established under the Science, Technology and Innovation Act 2013 (Revised 2014) herein after referred to as the Act. The objective of the Commission shall be to regulate and assure quality in the science, technology and innovation sector and advise the Government in matters related thereto.

CONDITIONS OF THE RESEARCH LICENSE

1. The License is granted subject to provisions of the Constitution of Kenya, the Science, Technology and Innovation Act, and other relevant laws, policies and regulations. Accordingly, the licensee shall adhere to such procedures, standards, code of ethics and guidelines as may be prescribed by regulations made under the Act, or prescribed by provisions of International treaties of which Kenya is a signatory to.
2. The research and its related activities as well as outcomes shall be beneficial to the country and shall not in any way;
    i. Endanger national security
    ii. Adversely affect the lives of Kenyans
    iii. Be in contravention of Kenya's international obligations including Biological Weapons Convention (BWC), Comprehensive Nuclear-Test-Ban Treaty Organization (CTBTO), Chemical, Biological, Radiological and Nuclear (CBRN).
    iv. Result in exploitation of intellectual property rights of communities in Kenya
    v. Adversely affect the environment
    vi. Adversely affect the rights of communities
    vii. Endanger public safety and national cohesion
    viii. Plagiarize someone else's work
3. The License is valid for the proposed research, location and specified period.
4. Neither the license nor any rights thereunder are transferable.
5. The Commission reserves the right to cancel the research at any time during the research period if in the opinion of the Commission the research is not implemented in conformity with the provisions of the Act or any other written law.
6. The Licensee shall inform the relevant County Director of Education, County Commissioner and County Governor before commencement of the research.
7. Excavation, filming, movement, and collection of specimens are subject to further necessary clearance from relevant Government Agencies.
8. The License does not give authority to transfer research materials.
9. The Commission may monitor and evaluate the licensed research project for the purpose of assessing and evaluating compliance with the conditions of the License.
10. The Licensee shall submit one hard copy, and upload a soft copy of their final report (thesis) onto a platform designated by the Commission within one year of completion of the research.
11. The Commission reserves the right to modify the conditions of the License including cancellation without prior notice.
12. Research, findings and information regarding research systems shall be stored or disseminated, utilized or applied in such a manner as may be prescribed by the Commission from time to time.
13. The Licensee shall disclose to the Commission, the relevant Institutional Scientific and Ethical Review Committee, and the relevant national agencies any inventions and discoveries that are of National strategic importance.
14. The Commission shall have powers to acquire from any person the right in, or to, any scientific innovation, invention or patent of strategic importance to the country.
15. Relevant Institutional Scientific and Ethical Review Committee shall monitor and evaluate the research periodically, and make a report of its findings to the Commission for necessary action.

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