Preventive Fraud Risk Management and Fraud Incidence: Evidence from Commercial Banks in Kenya (2020–2024)

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DOI: https://dx.doi.org/10.47772/IJRISS.2025.91100116

Received: 20 November 2025; Accepted: 26 November 2025; Published: 02 December 2025

ABSTRACT

Fraudulent activities often undermine institutional stability, erode customer confidence, and damage reputations among players in the banking sector. In Kenya, commercial banks lose approximately Ksh. 13 billion annually to fraud despite substantial investments in internal control systems and fraud prevention technologies. This study examined the effect of preventive fraud risk management practices (FRMP) on fraud incidence among commercial banks in Kenya between 2020 and 2024. Anchored on the Fraud Management Life Cycle Theory (FMLCT), the study adopted a causal research design and a quantitative approach. Data were collected using structured questionnaires from 168 senior officers drawn from 28 randomly selected commercial banks in Nairobi, Kenya. Correlation and simple linear regression analysis was conducted using SPSS Version 28. Results revealed a weak but significant negative relationship between preventive FRMP and fraud incidence ($\beta = -0.405$, $p = .022$, $R^2 = .046$). Key preventive practices like audit committee empowerment, customer due diligence, fraud prevention training, and staff rotation were found to moderately reduce fraud occurrences in commercial banks. The study concludes that preventive FRMP are essential but insufficient in isolation; their effectiveness depends on integration with other measures within a strong organizational risk culture. It recommends strengthening audit committees, enhancing fraud awareness training, and leveraging emerging technologies such as AI and data analytics to reinforce preventive measures and minimize fraud risks in the banking sector.

Keywords: preventive fraud risk management practices, banking fraud, fraud incidence, internal controls, audit committees, organizational risk culture, commercial banks

INTRODUCTION

Banking-related fraud has become one of the most widespread financial offenses globally that compromises the stability of institutions and public confidence (Mangala and Soni, 2023; Hussaini et al., 2019). High rates of technology advancements, the digitalization of financial services, and intricate processes of international transactions in the contemporary banking sector has widened the possibilities of fraudulent cases and made them more sophisticated (Nyakararimi et al., 2020). According to the Association of Certified Fraud Examiners (ACFE, 2022), companies receive losses of about 5% of annual earnings to fraud. The Nilson Report (2019) also indicated that in 2019, the amount of losses due to card fraud increased to USD 27.85 billion, which indicates the increased magnitude of financially motivated cyber-crime. Commercial banks in Kenya lose an estimated Ksh. 13 billion per year to identity theft, loan stacking and digital manipulation by the fraudsters (Anyanzwa, 2021). Such incidences undermine customer trust, hurt institutional reputation, and put regulatory control mechanisms under pressure.

Financial institutions all over the world have reacted with the tightening of their anti-fraud risk frameworks that lay greater stress on preventative, detective and corrective controls. Preventive Fraud Risk Management Practices (FRMP) are aimed at mitigating fraud risk before it takes place by employing internal controls, employee screening, ethical training, and customer due diligence (Halbouni et al., 2016; Omar and Bakar, 2012). Klynveld Peat Marwick Goerdeler (KPMG, 2020) established that 86% of banking executives across

the world had deployed or intended to deploy augmented preventive FRMP. Also, PricewaterhouseCoopers (PwC, 2020) observed that 56% of banks had augmented their investment in fraud detection technologies like AI and data analytics. Nonetheless, the level of fraud across the globe is increasing regardless of significant amounts of technological investments, an indication that there is a disparity between the implementation and adoption of the policies (Chepkoech & Rotich, 2017; Mwangi, 2020).

The banking industry in Kenya, which consists of 39 commercial banks licensed (CBK, 2023), is especially susceptible to internal and cyber-fraud. The industry is further complicated by the ineffective governance systems, insufficient forensic ability, and incompatible risk culture (Ocansey, 2017; Mwangi, 2020). Despite the presence of preventive measures like staff rotation, audit committee empowerment, and whistle-blowing policies, the continued occurrence of fraud indicates that there are differences in implementation in various institutions. Furthermore, although some of the studies have been done to assess general fraud risk management frameworks in Kenya (Chepkoech & Rotich, 2017; Wangombe, 2017), the impact of preventive FRMP on actual fraud rates in commercial banks has been assessed in a limited number of studies. This loophole underscores a need to conduct empirical assessment to determine the effect of particular preventive measures on the prevalence and typologies of fraud within Kenya in its changing regulatory and technological environments. The present research is especially topical in view of the growing sophistication of fraud in Kenya financial system, the emergence of e-banking, and the necessity of data-based risk management. The study seeks to fill the gap that exists in the literature of fraud by determining the key FRMP that have a major impact in the prevention of fraud. Finally, the results are likely to drive policy changes at the Central Bank of Kenya and improve the institutional frameworks of promoting transparency, accountability, and resistance to financial crime in the banking sector.

Specific Objective of the Study

i. To examine the effect of preventive fraud risk management practices (strengthened audit committees; policy for reporting fraud; thorough customer due diligence; employee reference verifications; fraud prevention training; corporate ethical guidelines; staff rotation; whistle-blowing policy; password protection; and virus protection) on fraud incidence among commercial banks in Kenya.

Research Hypothesis

H_{01}: Preventive fraud risk management practices (strengthened audit committees; policy for reporting fraud; thorough customer due diligence; employee reference verifications; fraud prevention training; corporate ethical guidelines; staff rotation; whistle-blowing policy; password protection; and virus protection) have no significant effect on fraud incidence among Kenyan commercial banks.

LITERATURE REVIEW

This section reviews existing studies on the variables under investigation and discusses the theoretical and conceptual foundations guiding the study.

Preventive Fraud Risk Management Practices and Fraud Incidence

Preventive FRMP encompass a range of organizational strategies and policies designed to stop fraud before it manifests. These include strengthening audit committees, enforcing customer due diligence, instituting fraud prevention training, conducting employee background checks, implementing whistle-blowing mechanisms, and enforcing corporate ethical codes (Hussaini, 2019; Omar & Abu Bakar, 2012; Halbouni et al., 2016). Empirical studies have consistently shown that effective preventive measures are associated with reduced fraud risk. For instance, Wangechi (2020) found a significant negative relationship between preventive controls and fraud levels in listed Kenyan firms, while Hussaini (2019) established that robust fraud prevention mechanisms enhance financial performance in Nigerian banks. Similarly, Bhasin (2016) noted that the implementation of anti-fraud programs, awareness campaigns, and periodic training fosters ethical decision-making and discourages fraudulent intent.

Technological advancements have further expanded the scope of preventive practices. Banks increasingly employ automated monitoring systems, data analytics, and Artificial Intelligence to identify unusual

transaction patterns and potential fraud triggers (Halbouni et al., 2016; McKinsey & Company, 2019). Cybersecurity tools such as virus protection, password authentication, and access control mechanisms act as technical barriers to internal and external fraud attempts. However, despite the adoption of these sophisticated tools, fraud persists largely due to human factors, poor implementation, or weak risk culture (Mwangi, 2020). A culture that tolerates unethical behavior or lacks accountability undermines even the most advanced control systems (Hussaini, 2019). Therefore, organizational culture acts as both a driver and moderator in the effectiveness of preventive controls.

Prior research provides mixed evidence regarding the efficacy of preventive measures. Studies by Adetiloye et al. (2016) and Fynefaceph et al. (2013) highlight that internal controls are essential to fraud prevention, while Micheni (2016) and Wangombe (2017) reported that internal control systems often fail to prevent fraud in Kenyan public institutions. Likewise, Othman et al. (2015) and Ushad & Ramen (2017) confirmed that staff rotation and segregation of duties deter fraudulent acts, whereas Bierstaker et al. (2006) found such measures ineffective in U.S. firms. These contradictions suggest that preventive measures alone may be insufficient without aligning them with strong ethical norms and effective implementation within the risk culture framework (Levy et al., 2010).

In the Kenyan context, preventive FRMP have become increasingly vital due to the surge in digital banking and electronic transactions, which heighten exposure to cyber fraud and identity theft (Anyanzwa, 2021; Chepkoech & Rotich, 2017). Banks have invested heavily in fraud management technologies, yet the persistence of fraud underscores the need for a comprehensive approach integrating both structural and behavioral interventions. Strengthened audit committees, employee training, customer due diligence, and periodic policy reviews remain core preventive elements. However, without embedding these within a culture of integrity, transparency, and accountability, preventive systems may only serve as formalities rather than deterrents.

In summary, literature reveals that preventive FRMP significantly reduce fraud incidence in commercial banks. The integration of preventive measures within the broader fraud management lifecycle enhances organizational resilience against internal and external fraud threats. However, the inconsistency in findings across contexts highlights the need for empirical studies within developing economies like Kenya, where differences in regulatory capacity, technological infrastructure, and ethical climates may influence the effectiveness of preventive practices (Mwangi, 2020; Hussaini, 2019). This study, therefore, contributes to filling this gap by empirically examining the effect of preventive fraud risk management practices on fraud incidence among commercial banks in Kenya.

Theoretical Framework

The present study was based on the Fraud Management Life Cycle Theory (FMLCT) that was designed by Wilhelm (2004). The theory cuts directly to the point that the management of the fraud risk must remain continuous and cyclical so that the lessons learned out of each fraud case may shape the enforcement of more effective controls and policies in the next phases (Mwangi, 2020; Ocansey, 2017; Hussaini, 2019; Halbouni et al., 2016; ACFE, 2018). The preventive stage is what the present study is centered around, and it is the core of the cycle of managing fraud. The initial defense against fraud is preventive practice, which tries to remove conditions and opportunities that allow acts of fraud. FMLCT indicates that prevention is less expensive than detection and response due to the fact that it reduces financial and reputation losses (Wilhelm, 2004). In the case of commercial banks in Kenya, audit committee empowerment, fraud prevention training, staff rotation and customer due diligence are relevant preventive controls to help the company check internal and external fraud risks. Furthermore, effective ethical frameworks and whistle-blowing systems will create an atmosphere of transparency and responsibility, which will scare away the potential violators of ethical standards by deter them through the weakness of controls (Hussaini, 2019).

The application of the FMLCT in this study provides a conceptual lens for examining how FRMP operate as proactive mechanisms in curbing fraudulent activities in the banking sector. It supports the hypothesis that preventive FRMP have a negative relationship with fraud incidence—meaning that stronger preventive measures correspond to lower levels of fraud within banks. By emphasizing prevention as an integral

component of the life cycle, the theory underscores the importance of anticipating fraud risks rather than merely reacting to them.

Conceptual Framework

As illustrated in Figure I, the dependent variable in this study is fraud incidence conceptualized as the occurrence of various fraudulent activities within commercial banks. The independent variable is preventive FRMP as outlined in Figure I (Omar & Abu Bakar, 2012; Hussaini, 2019). Preventive FRMP were hypothesized to have a negative relationship with fraud incidence. The conceptualization aligns with the FMLCT's preventive phase, where robust controls and vigilant oversight reduce opportunities for fraudulent behavior. Accordingly, the conceptual model posits that preventive FRMP (X_1) exert a direct influence on fraud incidence (Y).

METHODOLOGY

Design

A causal research design was adopted to establish cause-and-effect relationships between preventive FRMP and fraud incidence. According to Apuke (2017), causal research determines the influence of one variable on another through statistical testing. This design was appropriate since the study sought to assess how preventive measures such as audit committee empowerment, customer due diligence, staff rotation, and fraud prevention training influence the level of fraud within commercial banks. Structured Likert-scale questionnaires were used to collect quantitative data from respondents, which were analyzed through inferential statistics.

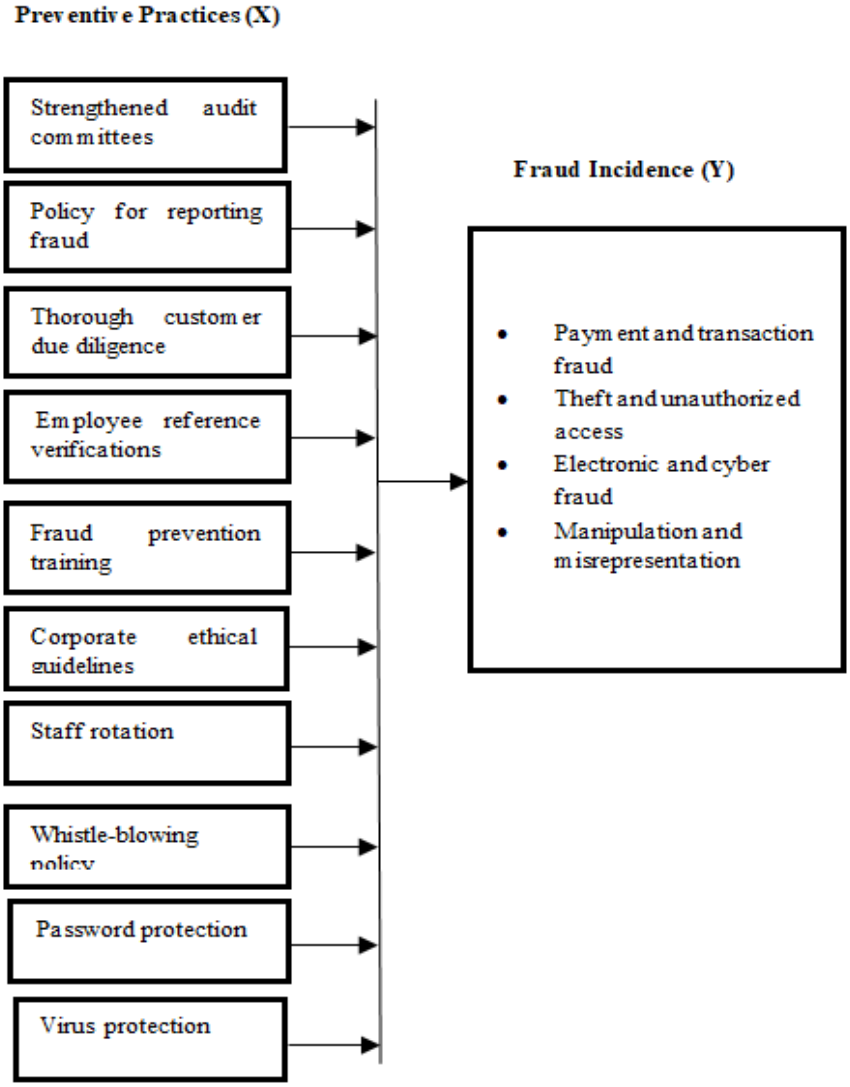

Figure I Conceptual framework for the study.

Participants

The target population consisted of senior officers in the risk management and internal audit departments, external auditors, and branch managers of all 39 licensed commercial banks in Kenya. These professionals were selected because they play a central role in implementing, monitoring, and evaluating fraud risk management systems. To ensure expertise, only officers with a minimum of three years' experience were considered.

Sampling Procedure

The study employed stratified random sampling to ensure proportional representation across the three banking tiers (Tier I, Tier II, and Tier III). Using Taro Yamane's (1967) formula with a 10% margin of error, a sample of 28 banks was determined. From each sampled bank, six respondents comprising two senior officers from risk management, two from internal audit, one branch manager, and one external auditor were selected. This yielded a total sample of 168 participants as shown in Table I.

Table I Sample Size Distribution

Category of Commercial Bank	Target Population (No. of Banks)	Sample Size	%
Tier I	9	6	21.43
Tier II	9	6	21.43
Tier III	21	16	57.14
Total	39	28	100

Data Collection

Data were collected using self-administered structured questionnaires comprising closed-ended questions measured on a five-point Likert scale (1 = Strongly Disagree to 5 = Strongly Agree). Content validity was established through expert review by senior bank managers and academic supervisors, followed by a pilot test involving 18 respondents drawn from three banks outside the main sampling frame. Feedback obtained during piloting led to refinement of ambiguous or redundant items. Construct validity was further assessed through factor analysis.

Analysis

Data analysis was performed using SPSS Version 28. Descriptive statistics summarized demographic characteristics, while Pearson's correlation and simple linear regression tested the hypothesis. The regression model was expressed as:

$$Y=\beta 0+\beta 1X1+\varepsilon$$

where Y denotes fraud incidence, β0 is the constant, β1 the regression coefficient for preventive FRMP, and ε the error term. Tolerance (0.583) and VIF (1.716) confirmed the absence of multicollinearity ensuring model validity.

RESULT

Out of the 168 questionnaires administered, 114 were completed and returned, yielding a response rate of 67.86%. After screening for completeness and consistency, all 114 questionnaires were retained for analysis. Respondents included senior officers from risk management (33.3%), internal audit/control departments (34.2%), branch managers (16.7%), and external auditors (15.8%) across 19 commercial banks. Demographically, 83 (72.8%) were male and 31 (27.2%) female, with most (75.4%) holding at least a bachelor's degree. A majority (79%) had between 1–9 years of managerial experience, and over 90% held professional certifications such as CPA, CFE, CIA, or ACAMS, reflecting a highly qualified sample. The Kaiser–Meyer–Olkin (KMO) value for preventive practices was .791, and Bartlett's test of sphericity was statistically significant ($\chi^2(45) = 714.012$, $p < .001$), confirming sampling adequacy and suitability for factor

extraction. Reliability of the questionnaire was confirmed using Cronbach's alpha coefficients. Preventive fraud risk management practices recorded an alpha of .87, while fraud incidence recorded .94. The overall reliability for the full scale was .90, indicating excellent internal consistency. These results confirm that the instrument used in the main survey was both valid and reliable for measuring the intended constructs.

Correlation between Preventive Fraud Risk Management Practices and Fraud Incidence

As shown in Table II, the Pearson correlation coefficient (r= - .215, p = .022) revealed a weak but statistically significant negative relationship between preventive FRMP and fraud incidence. This implies that as preventive practices are strengthened, incidences of fraud decrease modestly. This pattern is consistent with the conceptual framework, which posits that preventive mechanisms—aligned with the prevention phase of the Fraud Management Life Cycle Theory—should reduce opportunities for fraud before it occurs.

Table II Correlation between Preventive Fraud Risk Management Practices and Fraud Incidence

		Preventive Practices	**Fraud Incidence**
Preventive Practices	Pearson Correlation	1	**-.215***
	Sig. (2-tailed)		**.022**
	N	114	**114**
Fraud Incidence	Pearson Correlation	-.215*	**1**
	Sig. (2-tailed)	.022	
	N	114	**114**
***. Correlation is significant at the 0.05 level (2-tailed).**			

The study used Pearson correlation analysis to explore how different preventive fraud risk management measures relate to fraud occurrence levels. Results in Table III show that most preventive measures negatively correlate with fraud incidence, meaning they help reduce fraud. Empowered audit committees had the strongest effect (r = -.343, p < .001), emphasizing their crucial role in preventing fraud. Customer due diligence (r = -.307, p = .001), fraud prevention training (r = -.293, p = .002), staff rotation (r = -.251, p = .007), and employee reference checks (r = -.216, p = .021) also significantly lowered fraud risks. However, corporate ethical guidelines showed only a weak, non-significant link (r = -.179, p = .056), while whistle-blowing mechanisms, password protections, and virus protections had minimal or even positive correlations with fraud. These findings further reinforce the conceptual framework's premise that preventive strategies exert differentiated impacts on fraud incidence depending on their alignment with core organizational controls and behavioral norms. Specifically, measures such as empowered audit committees and customer due diligence reflect structural elements explicitly captured in the study's model, while weaker-performing measures suggest gaps between formal controls and practical risk culture dynamics. Overall, the findings highlight that empowering audit committees and enforcing due diligence, training, and staff policies are the most effective in reducing fraud.

Table III Correlation between Preventive Fraud Risk Management Practices Metrics and Fraud Incidence

Preventive FRMP Metrics		**Fraud Incidence**
The bank's audit committees are adequately empowered to oversee fraud risk management activities.	Pearson Correlation	-.343**
	Sig. (2-tailed)	.000
	N	114
The bank has a clear and accessible policy for reporting fraudulent activities.	Pearson Correlation	-.044
	Sig. (2-tailed)	.643
	N	114
The bank conducts thorough due diligence on customers to mitigate the risk of fraudulent activities.	Pearson Correlation	-.307**
	Sig. (2-tailed)	.001
	N	114
The bank verifies employee references rigorously to minimize the potential for fraudulent behavior.	Pearson Correlation	-.216*
	Sig. (2-tailed)	.021
	N	114

The bank provides comprehensive training to employees on fraud prevention measures.	Pearson Correlation	-.293**
	Sig. (2-tailed)	.002
	N	114
The bank has well-defined corporate ethical guidelines that guide employee behavior to prevent fraud.	Pearson Correlation	-.179
	Sig. (2-tailed)	.056
	N	114
The bank implements staff rotation policies to mitigate the risk of fraud through collusion or insider threats.	Pearson Correlation	-.251**
	Sig. (2-tailed)	.007
	N	114
The bank has established mechanisms for employees to report suspected fraudulent activities without fear of retaliation.	Pearson Correlation	.072
	Sig. (2-tailed)	.448
	N	114
The bank employs robust password protection measures to safeguard sensitive information and prevent unauthorized access.	Pearson Correlation	.170
	Sig. (2-tailed)	.070
	N	114
The bank employs effective virus protection measures to prevent malware and cyber threats that could lead to fraudulent activities.	Pearson Correlation	.091
	Sig. (2-tailed)	.338
	N	114
****. Correlation is significant at the 0.01 level (2-tailed).**		
***. Correlation is significant at the 0.05 level (2-tailed).**		

Regression Analysis and Hypothesis Testing for Preventive Fraud Risk Management Practices

Hypothesis testing was done using simple linear regression analysis. A hypothesis was developed and tested to examine the effect of preventive FRMP on fraud incidence among commercial banks in Kenya. The null hypothesis was that:

H_{01}: Preventive fraud risk management practices (strengthened audit committees; policy for reporting fraud; thorough customer due diligence; employee reference verifications; fraud prevention training; corporate ethical guidelines; staff rotation; whistle-blowing policy; password protection; and virus protection) have no significant effect on fraud incidence among Kenyan commercial banks.

In Table IV, the analysis shows that preventive FRMP have a meaningful yet negative effect on fraud cases in Kenyan commercial banks. These measures explain about 4.6% of the changes in fraud occurrence (R^2 = 0.046). The results are statistically significant (F = 5.431, p = 0.022), with findings indicating that every increase in preventive FRMP reduces fraud incidents by roughly 0.405 units. The regression model ($Y = 3.968 - 0.405X_1$) confirms that stronger preventive measures lead to fewer fraud cases. Given the p-value is below 0.05, the null hypothesis is rejected. Moreover, this regression outcome directly supports the conceptual framework's assertion that preventive mechanisms serve as foundational levers through which fraud risk is mitigated. By demonstrating a statistically significant negative effect, the model provides empirical validation for the prevention component of the FMLCT as operationalized in this study.

DISCUSSION

This study set out to understand whether preventive FRMP can help curb fraud in commercial banks across Kenya. Preventive FRMP refers to proactive strategies that banks put in place to stop fraud before it happens. These measures include empowering audit committees, training employees to detect fraud, screening new hires, performing thorough customer checks, strengthening cybersecurity defenses, and encouraging whistle-blowing. Previous research has long suggested that such measures reduce opportunities for fraud (Hussaini, 2019; Omar & Abu Bakar, 2012), but this study sought to test their real-world impact in Kenyan banks. To achieve this, researchers gathered data from senior risk management officers, internal and external auditors, and branch managers working in 19 commercial banks headquartered in Nairobi. Using correlation and regression analysis, they examined the relationship between preventive measures and actual cases of fraud reported by these banks.

The results show that preventive FRMP have a statistically significant but relatively weak effect on reducing fraud (r = -0.215, p = .022). In other words, when banks strengthen their preventive controls, fraud cases tend to decline—but only slightly. Some practices were found to be more effective than others. Empowering audit committees had the strongest link to reducing fraud (r = -0.343, p < .001), followed closely by customer due diligence (r = -0.307, p = .001), fraud prevention training (r = -0.293, p = .002), and rotating staff between roles (r = -0.251, p = .007). On the other hand, some measures that are often considered essential—such as whistle-blowing mechanisms, password protections, and antivirus systems—showed little or no significant effect on fraud occurrence. This pattern suggests that while technical safeguards and reporting channels exist, they may be insufficient without strong governance oversight, behavioral reinforcement, and cultural alignment within banks (Halbouni et al., 2016; Bhasin, 2016).

Table IV Linear Regression Results for Preventive Fraud Risk Management Practices

Model Summary									
Model	R	R Square	Adjusted R Square			Std. Error of the Estimate			
1	.215[a]	.046	.038			.76360			
ANOVAa									
Model		Sum of Squares		df	Mean Square		F		Sig.
1	Regression	3.167		1	3.167		5.431		.022[b]
	Residual	65.305		112	.583				
	Total	68.472		113					
Coefficientsa									
Model			Unstandardized_Coefficients			Standardized Coefficients		t	Sig.
			B	Std. Error		Beta			
1	(Constant)		3.968	.780				5.087	.000
	Preventive Practices		-.405	.174		-.215		-2.330	.022
a. Dependent Variable: Fraud Incidence b. Predictors: (Constant), Preventive Practices									

The findings broadly align with previous research showing that preventive mechanisms reduce opportunities for fraud (Hussaini, 2019; Kamaliah et al., 2018). However, they also reveal that prevention alone does not strongly predict fraud outcomes. One reason preventive FRMP explain only a small proportion of fraud variance (R^2 = .046) is that fraud in banking systems is multidimensional and often arises from collusion, circumventing controls that are purely procedural or technical (Olatunji & Dada, 2014; Vousinas, 2016). Moreover, preventive measures may be uniformly implemented across Kenyan banks due to regulatory requirements, which reduces variability and limits their ability to statistically explain differences in reported fraud levels (Mwangi, 2020). Further, evolving cyber-enabled fraud tactics often outpace routine preventive mechanisms, rendering them less effective unless paired with adaptive detection and responsive strategies (Micheni, 2016; Pandey et al., 2021).

Some measures that showed strong effects in this study—such as audit committee empowerment and customer due diligence—emphasize structural governance and risk-based verification rather than reliance on technological solutions alone. The relatively weaker impact of whistle-blowing and system-level controls suggests organizational culture plays a significant mediating role. This interpretation is consistent with the FMLCT, which implies that preventive controls only function optimally when embedded within a culture that reinforces ethical behavior, accountability, and transparency (Wilhelm, 2004; Mwangi, 2020). Thus, preventive FRMP cannot independently suppress fraud; they require cultural conditions that normalize vigilance and reduce tolerance for unethical practices. These findings also help explain inconsistencies in the literature. While this study identified staff rotation as helpful, other studies in the Kenyan public sector and U.S. corporations found minimal benefits. This divergence likely reflects variations in institutional cultures, oversight strength, and enforcement rigor across sectors, as the conceptual framework anticipates. Where risk

culture is weak or compliance is symbolic, preventive controls—even when formally adopted—may be bypassed, producing the limited predictive power observed in this study (Hussaini, 2019).

Overall, the results indicate that preventive FRMP do help reduce fraud in Kenyan commercial banks, particularly when grounded in active oversight bodies, rigorous customer vetting, and structured fraud-awareness training. However, the modest effect sizes demonstrate that banks cannot rely on prevention alone. The evidence reinforces FMLCT's assertion that prevention must be integrated with detection and corrective mechanisms to produce meaningful reductions in fraud. Moreover, strengthening risk culture—through leadership commitment, ethical norms, and consistent enforcement—is crucial for transforming preventive controls from procedural checklists into effective deterrents. In an environment where fraud schemes are increasingly sophisticated, a holistic, culture-driven approach remains essential.

Limitations

This study faced several limitations that should be acknowledged when interpreting the findings. First, the study relied primarily on self-reported data collected through structured questionnaires from senior officers, auditors, and managers in commercial banks. While anonymity and confidentiality were assured, respondents may have underreported or exaggerated their responses to align with socially desirable norms or institutional expectations, especially given the sensitivity surrounding fraud. Because respondents were directly involved in fraud risk management processes, their professional roles may have shaped how they portrayed their institutions' practices, heightening the likelihood of institutional self-protection and socially desirable responding in a sensitive domain. This reinforces the possibility that some responses reflect organizational positioning rather than objective assessments, thereby amplifying response bias. This reliance on self-reporting may have introduced response bias, limiting the objectivity of the data. Future research could mitigate this limitation through triangulation—integrating interviews, document reviews, and secondary data on reported fraud cases—to enhance data validity. Additionally, adopting mixed-methods designs incorporating interviews or case studies would help contextualize self-reported responses and reduce the limitations associated with single-method data collection.

Second, the study was geographically confined to commercial banks headquartered in Nairobi County. While Nairobi hosts the majority of bank headquarters, the findings may not fully capture the fraud dynamics in branch networks across other counties where variations in risk culture, regulatory oversight, and fraud typologies might exist. As a result, the generalizability of the results to all banks in Kenya, particularly those in rural or semi-urban areas, remains limited. Expanding future studies to include a wider regional scope would provide a more comprehensive understanding of fraud risk management effectiveness.

Third, the study's cross-sectional design restricted the ability to infer causality between preventive fraud risk management practices and fraud incidence. Fraud is dynamic and evolves over time; thus, a longitudinal research design could provide deeper insights into how preventive measures influence fraud trends in the long run. Lastly, access to empirical fraud data was limited due to confidentiality constraints, which may have constrained the depth of analysis. The sensitivity of fraud-related information meant that banks were often reluctant to disclose detailed internal data, further restricting opportunities to compare self-reported information against objective fraud records. Moreover, the low explanatory power of the regression model, reflected in the modest R^2 value, indicates that additional factors—such as organizational culture, regulatory compliance strength, and technological capability—may play a significant role in shaping fraud outcomes and should be incorporated into future models to achieve a more comprehensive explanatory framework. Despite these challenges, the study offers valuable insights into preventive fraud risk management practices in Kenyan commercial banks.

CONCLUSIONS AND RECOMMENDATIONS

The section has highlighted the main findings of the study, provided practical, policy and research based recommendations. The researcher found that preventive FRMP affect the level of incidence of fraud among commercial banks in Kenya significantly and statistically. In particular, the regression analysis showed that the following preventive measures, audit committee empowerment, comprehensive customer due diligence, fraud

prevention training, and staff rotation are useful in decreasing the probability of fraudulent activities. The low correlation coefficient (-0.405, p =.022, R 2 =.046) however, shows that preventive measures mitigate the effect of fraud but not independently. This implies that perpetuation of fraud exists partly because of insufficient implementation of controls that are in place, risk culture inconsistencies, as well as low integration of technology-oriented prevention mechanisms among banks. Thus, commercial banks have to incorporate preventive controls into an adaptive risk culture that enhances ethical practices, accountability, and continuous observation.

Using these findings, the study advises the banks to make audit committees more robust in order to have good control over the fraud control mechanisms and policy implementation. Ethical conduct and arising fraud risks capacity-building in the staff should be institutionalized through regular training and awareness programs. Bank also needs to further the practice of customer due diligence and the rotation of staff in sensitive jobs to minimize collusion opportunities. Compliance monitoring by regulators like the Central Bank of Kenya should also be enhanced and banks must be encouraged to implement more modern technologies, including artificial intelligence, machine learning, and blockchain, to detect and stop fraud.

ACKNOWLEDGMENT

We extend sincere gratitude to the faculty and administrative staff of the Institute of Criminology, Forensics, and Security Studies at Dedan Kimathi University of Technology for their guidance. Appreciation is also given to the senior officers, auditors, and managers from participating commercial banks for their cooperation during data collection.

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