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Role of Forensic Investigations in Reduction of Financial Fraud Among Commercial Banks in South Sudan

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Forensic Investigations, Reducing, Financial Fraud, Commercial Banks and South Sudan.

Financial fraud poses a significant challenge to the banking sector globally, including South Sudan. This study aimed to investigate the effectiveness of forensic investigations in mitigating financial fraud within commercial banks. Employing a mixed-methods approach and an explanatory research design, the study targeted 119 respondents and nine commercial banks. Data was analysed using descriptive statistics and regression analyses. The findings revealed a strong association between increased levels of forensic investigations and a significant reduction in financial fraud among commercial banks in South Sudan. The study emphasized the crucial role of adopting sophisticated technologies like data analytics and forensic accounting techniques, as well as implementing robust internal control mechanisms, in enhancing the effectiveness of forensic investigations. Through bolstering forensic investigation practices, not only can financial fraud be curbed, but the overall integrity and trustworthiness of South Sudan's banking sector can be enhanced. To address financial fraud effectively, the study recommended that commercial banks invest in advanced forensic investigation tools and technologies, enabling them to better detect and prevent fraudulent activities. Furthermore, enhancing the training and capacity-building of forensic professionals within these institutions was identified as a means to improve their effectiveness in dealing with fraud. Strengthening internal control systems and fostering a culture of transparency and accountability were also highlighted as vital steps. This research holds significance in informing policy and practice within South Sudan's banking sector. Through highlighting the effectiveness of forensic investigations in combating financial fraud, the study emphasizes the importance of prioritizing forensic capabilities within commercial banks. Moreover, it contributes to the existing literature on forensic investigations and financial fraud, offering valuable insights for researchers and policymakers alike.

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INTRODUCTION

Financial fraud poses a significant threat to the integrity and stability of the banking sector worldwide. Defined as the intentional deception for personal gain, financial fraud encompasses various illicit activities such as embezzlement, money laundering, and accounting fraud (Association of Certified Fraud Examiners [ACFE], 2018). Commercial banks, being key financial institutions, are particularly vulnerable to such fraudulent activities due to the nature of their operations and the large volume of financial transactions they handle (Gupta & Pass, 2019).

Forensic investigations are essential in commercial banks for detecting and preventing financial fraud. Forensic accounting, as a specialized field within forensic investigation, applies accounting techniques to investigate financial crimes. This includes methods like data analysis, interviews, and scrutiny of financial statements to uncover fraudulent activities and gather evidence for legal proceedings (Singleton, Singleton, & Bologna, 2010). These investigations play a crucial role in maintaining trust and confidence among stakeholders, such as depositors and investors, by identifying and addressing fraudulent activities promptly.

Furthermore, forensic investigations serve as a proactive measure to mitigate financial losses and protect the integrity of the banking system. By identifying and addressing fraudulent activities promptly, these investigations help maintain trust and confidence among stakeholders, including depositors and investors. Additionally, the insights gained from forensic investigations can be used to enhance fraud prevention strategies,

internal controls, and regulatory frameworks in commercial banks (Ramamoorti et al., 2010).

Forensic accounting techniques provide valuable insights into financial transactions and help identify irregularities, patterns, and anomalies that may indicate fraud. Through analyzing financial data, forensic accountants can detect fraudulent activities such as embezzlement, money laundering, asset misappropriation, and financial statement manipulation (Singleton, et al., 2010). They use specialized tools and methodologies to examine financial records, trace transactions, and reconstruct financial events, providing a comprehensive understanding of the fraudulent schemes.

In the context of this study, the term "forensic investigations" refers to the systematic examination of financial records and transactions to detect and prevent fraud in commercial banks (Wells, 2014). This study aims to investigate the role of forensic investigations in reducing financial fraud among commercial banks in South Sudan. The study employs a mixed-methods approach, combining quantitative analysis of fraud data and qualitative interviews with forensic experts and banking professionals. The findings reveal that forensic investigations play a crucial role in detecting and preventing financial fraud in commercial banks. Key factors contributing to the effectiveness of forensic investigations include the use of advanced technologies, such as data analytics and forensic accounting techniques, as well as the establishment of strong internal control systems. The study concludes that enhancing forensic investigation practices can significantly reduce financial fraud and improve the overall integrity of the banking sector in South Sudan.

According to the Association of Certified Fraud Examiners (ACFE), financial fraud involves the use of deception to obtain an unjust or illegal financial advantage. Gupta and Pass (2019) further elaborate that financial fraud can occur in various forms and contexts, including corporate fraud, investment fraud, and tax evasion.

The status of commercial banks in relation to forensic investigations globally varies depending on the regulatory environment, the prevalence of financial crimes, and the effectiveness of forensic practices. Ramamoorti, Olsen, and Morrison (2010) note that commercial banks are often targeted by fraudsters due to the large volume of financial transactions they handle. As a result, banks have invested significantly in forensic investigations to detect and prevent financial fraud. Singleton, Singleton, and Bologna (2010) highlight that the implementation of forensic accounting and auditing practices has become increasingly important for commercial banks to mitigate fraud risks and maintain trust with stakeholders.

Banks are increasingly leveraging forensic techniques and technologies to identify and address financial fraud, thereby enhancing the integrity and stability of the financial system. Forensic techniques, such as data analytics, pattern recognition, and anomaly detection, are being employed to analyse large volumes of financial data for signs of fraudulent activity (Wells, 2011). These techniques enable banks to detect unusual patterns or transactions that may indicate fraudulent behaviour, allowing them to take timely action to mitigate risks and losses.

Furthermore, advancements in technology, such as artificial intelligence (AI) and machine learning, are revolutionizing forensic investigations in banking. AI-based systems can analyse vast amounts of data in real time, identifying potential fraud indicators more efficiently than traditional methods (Shin *et al.*, 2018). This proactive approach to fraud detection not only enhances the security of banks but also improves customer trust and confidence in the financial system.

Moreover, the collaboration between banks, regulatory authorities, and law enforcement agencies has become essential in combating financial fraud. The sharing of information and best practices enables banks to stay ahead of fraudsters and enhance the overall resilience of the financial system (Albrecht *et al.*, 2019). Through investing in forensic techniques and technologies and fostering collaboration with stakeholders, banks can effectively deter, detect, and respond to financial fraud, thereby safeguarding the integrity and stability of the financial system.

Despite efforts to mitigate financial fraud, commercial banks in South Sudan continue to face significant challenges. Statistics indicate a rise in financial fraud cases, highlighting the need for effective measures to combat this issue. The lack of comprehensive forensic investigation practices in South Sudan's banking sector has contributed to the persistence of financial fraud. Therefore, there is a pressing need to examine the role of forensic investigations in reducing financial fraud among commercial banks in South Sudan to enhance the integrity and stability of the banking sector (ACFE, 2018).

Purpose of the Study

This study sought to investigate the role of forensic investigations in reducing financial fraud among commercial banks in South Sudan.

Hypothesis

This study sought to address the null hypothesis H_01 , stating that there is no significant effect between FI and the reduction of FF among commercial banks in South Sudan.

Significance of the Study

Through effectiveness of forensic investigations in combating financial fraud commercial banks in South Sudan can develop and implement more robust fraud detection and prevention strategies. Additionally, the findings of the study could inform policymakers and regulators about the importance of promoting forensic practices and strengthening regulatory frameworks to safeguard the financial system. Ultimately, the study aimed

to improve the integrity and stability of commercial banks in South Sudan, thereby enhancing investor confidence and fostering sustainable economic growth.

The commercial banks themselves stand to benefit by gaining insights into effective forensic practices that could help them detect and prevent fraud, thereby safeguarding their assets and reputation. Regulators and policymakers can use the findings to develop and implement regulatory frameworks that promote stronger forensic practices within the banking sector, leading to a more secure financial system. Forensic professionals and auditors could enhance their knowledge and skills in investigating financial fraud, improving their ability to assist banks in fraud detection and prevention. Additionally, customers and shareholders of commercial banks can benefit from increased confidence in the banking system, knowing that measures are in place to mitigate fraud risks.

THEORETICAL FRAMEWORK

The Fraud Triangle Theory

The Fraud Triangle Theory, developed by Donald Cressey in the 1953, is a widely recognized framework for understanding the psychology behind fraudulent behaviours. The theory posits three key elements: pressure, opportunity, and rationalization must be present for an individual to commit fraud (Wells, 2005). Pressure refers to the financial or personal circumstances that compel someone to commit fraud, such as financial difficulties or a desire for a lavish lifestyle. Opportunity refers to the conditions that allow fraud to occur, such as weak internal controls or lack of oversight. Rationalization is the mindset that individuals use to justify their fraudulent actions, such as believing that they are underpaid or deserving of the illicit gains.

One of the strengths of the Fraud Triangle Theory is its simplicity and intuitive nature, which makes it accessible for both academics and practitioners. The theory's emphasis on addressing the underlying psychological and situational factors that contribute to fraud is also seen as a valuable

insight for designing effective fraud prevention strategies (Cressey, 1953). By understanding and disrupting one or more elements of the Fraud Triangle, organizations can reduce the likelihood of fraudulent behaviour occurring.

However, the Fraud Triangle Theory has faced criticism for oversimplifying the complex nature of fraud. Some argue that it may not fully capture the range of factors that can influence fraudulent behaviour, such as organizational culture or external pressures. Critics also point out that the theory places too much emphasis on individual characteristics and may overlook broader systemic issues that can contribute to fraud. Despite these criticisms, the Fraud Triangle Theory remains a foundational concept in the field of forensic accounting and is widely used to understand and prevent fraud.

Agency Theory

Agency Theory, developed by Michael C. Jensen and William H. Meckling in the 1970s, offers insights that can complement and address some of the weaknesses of the Fraud Triangle Theory. One of the key strengths of Agency Theory is its focus on the alignment of incentives and interests between principals and agents in organizations. By emphasizing the importance of this alignment, the theory highlights the role of monitoring and oversight mechanisms, such as forensic investigations, in reducing conflicts of interest and mitigating agency costs.

Moreover, Agency Theory acknowledges the presence of information asymmetry between principals and agents, which can lead to opportunistic behaviour by agents. Forensic investigations can be seen as a tool to reduce this information asymmetry by providing principals with greater transparency and insight into the actions of their agents. This can help in detecting and deterring fraudulent behaviour, thereby addressing one of the key elements of the Fraud Triangle Theory.

While Agency Theory may also have its limitations, such as oversimplifying organizational behaviour and decision-making, its

emphasis on aligning incentives and addressing information asymmetry can complement the Fraud Triangle Theory's focus on individual motivations and rationalizations. Through integrating insights from both theories, organizations can develop more comprehensive strategies to prevent and detect financial fraud, taking into account both the individual and systemic factors that influence fraudulent behaviour.

EMPIRICAL LITERATURE

Several studies have examined the role of forensic accounting in reducing financial fraud among commercial banks in different regions. Olusegun (2018) investigated the role of forensic accounting in fraud detection and prevention, focusing on Nigerian Deposit Money Banks. The study found that forensic accounting plays a crucial role in uncovering fraudulent activities and identifying control weaknesses. It highlighted the importance of forensic accountants in analysing financial data and transactions to detect irregularities and potential fraud schemes. The study also emphasized the significance of forensic accounting in providing evidence that can be used in legal proceedings against perpetrators of financial fraud. Overall, Olusegun's research underscored the instrumental role of forensic accounting in enhancing the integrity and transparency of financial systems within commercial banks, ultimately contributing to the prevention and detection of financial fraud.

Ogunleye and Fagbemi (2017) conducted an empirical analysis of forensic accounting practices in the Nigerian banking sector. Using interviews and case studies, they examined the role of forensic accounting in detecting and preventing financial fraud. The study identified weaknesses in internal controls and governance structures as key factors contributing to fraud in Nigerian banks. The researchers concluded that the implementation of forensic accounting practices could enhance fraud detection and prevention efforts. They recommended that Nigerian banks should strengthen their internal

controls and governance frameworks to mitigate fraud risks.

Anifowose, Olokoyo, and Olamide (2016) adopted a descriptive approach to examine the prevalence of financial fraud in the Nigerian banking sector and the role of forensic accounting in combating fraud. The study highlighted the significant impact of financial fraud on the stability of Nigerian banks and the economy. It emphasized the importance of forensic accounting in detecting and preventing fraud, recommending that banks should adopt forensic accounting practices to safeguard their financial resources. The researchers also suggested that regulatory authorities should enforce compliance with forensic accounting standards to enhance fraud detection and prevention in the banking sector.

Ntim, Opong, Danbolt, and Thomas (2015) examined voluntary corporate governance disclosures by post-apartheid South African corporations. Through a content analysis of annual reports, the study aimed to understand the extent and nature of corporate governance disclosures in the South African context. The researchers found that South African corporations generally provided a moderate level of corporate governance disclosures, with variations across different governance mechanisms such as board structure, audit committees, and risk management. The study highlighted the importance of voluntary disclosures in enhancing transparency and accountability in corporate governance practices. The findings suggested that while South African corporations have made progress in corporate governance disclosures since the end of apartheid, there is still room for improvement to align with international best practices.

Furlow, Mayhew, and Peck (2016) investigated fraud risk assessment in the banking industry, specifically focusing on assessing the fraud triangle. The study aimed to identify the factors contributing to fraud in banks and assess the effectiveness of fraud prevention measures. Using a quantitative approach, the researchers analysed data related to fraud incidents in the banking sector. The findings revealed that the fraud

triangle, which includes pressure, opportunity, and rationalization, can be used as a framework for assessing fraud risk in banks. The study underscored the importance of implementing robust fraud prevention measures, such as internal controls and monitoring systems, to mitigate fraud risks in the banking industry. The findings contribute to the literature on fraud risk assessment and have practical implications for banks seeking to enhance their fraud prevention strategies.

Adebisi and Olatunde (2017) conducted a study on forensic accounting and fraud investigation in commercial banks in Nigeria, using a survey approach. Their findings indicated that forensic accounting is essential for detecting and preventing fraud in Nigerian commercial banks. The study highlighted the importance of forensic accountants in identifying fraudulent activities, analysing financial data, and providing evidence for legal proceedings. It also emphasized the need for continuous training and development of forensic accounting skills among bank employees to effectively combat fraud. Overall, Adebisi and Olatunde's research underscored the critical role of forensic accounting in enhancing the integrity and transparency of financial systems within commercial banks in Nigeria.

Kusi and Amankwah-Amoah (2019) conducted a case study on selected commercial banks in Ghana, highlighting the positive impact of forensic accounting on fraud detection and prevention. Their research revealed that forensic accounting practices, such as data analysis and investigation techniques, were instrumental in uncovering fraudulent activities within the banks. The study emphasized the importance of implementing robust forensic accounting procedures and building a strong anti-fraud culture within financial institutions to deter fraudulent behaviour. Kusi and Amankwah-Amoah (2019) underscored the significant role of forensic accounting in safeguarding the financial sector against fraud, ultimately contributing to the stability and trustworthiness of commercial banks in Ghana.

Van Der Linde and Coetzee (2018) examined the role of forensic auditing in detecting and preventing fraud in commercial banks in South Africa. Their findings suggested that forensic auditing is effective in detecting and preventing fraud in South African banks. The study highlighted the importance of proactive forensic auditing practices in identifying fraudulent activities and implementing preventative measures. The research emphasized the need for continuous monitoring and evaluation of internal controls, as well as the importance of fostering a strong ethical culture within the banking sector. Van Der Linde and Coetzee (2018) study provided valuable insights into the role of forensic auditing in combating fraud in South African commercial banks, contributing to the broader discourse on fraud prevention and detection in the banking industry.

Nyoni and Chikoko (2017) explored forensic accounting and financial fraud in commercial banks in Zimbabwe. Their study highlighted the effectiveness of forensic accounting in detecting and preventing financial fraud. By analysing case studies and interviewing forensic accounting professionals, the researchers found that forensic accounting techniques, such as data analysis and investigative procedures, are crucial in uncovering fraudulent activities within commercial banks. The study also emphasized the importance of implementing robust internal controls and regular audits to mitigate fraud risks. Overall, Nyoni and Chikoko (2017) study underscored the significant role of forensic accounting in safeguarding the integrity of commercial banks in Zimbabwe.

Similarly, Mwangi and Kamau (2016) focused on Kenya, using a case study approach to investigate forensic accounting and fraud prevention in commercial banks. The study concluded that forensic accounting plays a significant role in fraud prevention in Kenyan banks. The researchers emphasized the importance of proactive fraud detection measures, such as regular forensic audits and the use of advanced data analysis techniques, in identifying and preventing fraudulent activities. They also

highlighted the need for continuous training and awareness programs for bank staff to enhance their ability to detect and report suspicious transactions. Overall, the study underscored the critical role of forensic accounting in enhancing the effectiveness of fraud prevention strategies in Kenyan commercial banks.

In their study, Mala, Kamau, and Maina (2018) investigated the effectiveness of forensic accounting techniques in detecting fraud within commercial banks in Kenya. Employing a survey approach, the researchers collected data from various banks. They found that forensic accounting techniques, particularly data analysis, interviews, and document examination, were highly effective in uncovering fraudulent activities. The study highlighted the importance of integrating forensic accounting practices into banking operations to enhance fraud detection and prevention efforts. The researchers recommended that banks should invest more in forensic accounting to protect their financial resources.

Nyariki (2016), sought to establish the strategic evaluation approaches adopted by KCB Bank and to determine the influence of strategic evaluation approaches on the performance of KCB Bank. The study was guided by Agency theory and Open Systems theory. The target population of the study was the KCB bank's staff, top management, middle management and subordinate staff. This research was a case study. The study concluded that the strategy evaluation practices identified at KCB Bank to include benchmarking, internal audits, balanced scorecard, performance appraisals, accreditations and certifications, customer satisfaction surveys and the use of information technology programs. The study concluded that the benefit of a strategy evaluation is that it facilitates effective decision-making, better selection of tactical options and teamwork. It can also be concluded that strategy evaluation helps in clearly defining the purpose of the organization and establishing realistic goals and objectives consistent with that mission in a defined timeframe within the organization's capacity for implementation which aids in effective decision-making policies.

Mumo and Ongore (2019) conducted a comparative study on the effectiveness of forensic accounting in fraud detection among commercial banks in East Africa. Their findings highlighted the effectiveness of forensic accounting in fraud detection in East African commercial banks. These studies collectively emphasize the importance of forensic accounting and auditing practices in mitigating fraud risks and maintaining trust in the banking sector. The researchers emphasized the need for continuous improvement in forensic accounting practices, including the adoption of advanced technologies and techniques to enhance fraud detection capabilities. They also highlighted the importance of collaboration between banks, regulatory authorities, and law enforcement agencies to strengthen fraud prevention efforts in the region. Overall, the studies underscore the critical role of forensic accounting in safeguarding the financial system and enhancing transparency and accountability in commercial banks.

RESEARCH METHODOLOGY

Target population consisted of 119 banking professionals, namely tellers, loan officers, branch managers, financial analysts, risk managers and forensic experts. The study involved a mixed-methods approach to gather comprehensive and in-depth data. Firstly, quantitative methods analysed historical fraud data from commercial banks in South Sudan, focusing on trends, patterns, and the effectiveness of forensic investigations in detecting and preventing fraud. A Census study of 119 respondents was used since the study targeted only tellers, loan officers, branch managers, financial analysts, risk managers and forensic experts. Therefore, the sample size was 119 respondents and nine (9) commercial banks from 29 commercial banks (30% of 29, Mugenda and Mugenda, 2003). This quantitative analysis also included the questionnaires distributed to 119 banking professionals to gather data on their perceptions and experiences with forensic investigations in fraud mitigation. The variable, forensic investigations had ten (10) items. The means and standard deviations of the respondents' responses

were computed from the five-point Likert Scale of Strongly Agreed (SA = 5), Agree (A = 4), Neutral (N = 3), Disagree (D = 2), strongly disagree (SD = 1).

Secondly, qualitative methods such as interviews and focus groups were also used to collect insights from key stakeholders, including nine (9) bank managers, 12 forensic investigators, six (6) regulatory authorities, and five (5) law enforcement agencies. These qualitative data provided a deeper understanding of the challenges, successes, and best practices related to forensic investigations in combating financial fraud. Additionally, case studies of specific fraud cases and the role of forensic investigations in resolving them were analysed to provide real-world examples and lessons learned. In summary, this mixed-methods approach would allow for a comprehensive examination of the role of forensic investigations in reducing financial fraud among commercial banks in South Sudan, combining quantitative data analysis with qualitative insights from key stakeholders.

The study utilized both probability and non-probability sampling techniques. For the quantitative aspect of the study, a stratified random sampling technique was employed to ensure that the sample of nine (9) banks selected was representative of 29 commercial banks in South Sudan. Stratification was based on factors such as bank size, geographical location, and years of operation. This allowed for a more accurate analysis of fraud trends and the effectiveness of forensic investigations across different types of banks.

For the qualitative aspect, purposive sampling was used to select key informants such as bank managers, forensic experts, and regulatory authorities who had relevant knowledge and experience in forensic investigations and fraud detection. This approach ensured that the sample included individuals with diverse perspectives and experiences, providing rich and insightful data for the qualitative analysis. The study sought to test the Hypothesis (H₀₁) with fitted linear regression analysis model: $Y = \beta_0 + \beta_1 X_1 + \varepsilon$.

Where: Y = Reduction of Financial Fraud; X₁ = Forensic Investigations; β_0 is the intercept term.; β_1 is the coefficient representing Forensic Investigations; ε is the error term, representing unexplained variation in the performance of the Ministry of Health.

Analytical Framework

This study aimed to explore the effectiveness of forensic investigations in mitigating financial fraud within commercial banks in South Sudan. The target population consisted of 29 commercial banks and 119 respondents. The study employed an explanatory research design and utilized both primary and secondary data sources. The data was analyzed using descriptive and inferential statistics, including regression analyses.

Validity and Reliability

To enhance the validity and reliability of the research instruments in this study, several steps were taken. Content validity was ensured through a comprehensive literature review, and expert review was conducted to assess the instruments' relevance and clarity. Pilot testing allowed for feedback and refinements. For reliability, a test-retest method was used to assess the consistency of the survey instrument over time. Internal consistency was measured through Cronbach's alpha coefficient. Standardized procedures were followed during data collection and analysis to minimize errors and bias. These measures aimed to increase the accuracy and credibility of the study's findings and conclusions.

RESULTS AND DISCUSSION

Forensic Investigations and Financial Fraud

To achieve this, descriptive statistics of forensic investigations on financial fraud were computed whose results are as shown in *Table 1*. These descriptive results indicate strong agreement among respondents regarding the importance and effectiveness of forensic investigations in detecting and preventing financial fraud in commercial banks. On average, respondents strongly agreed that forensic investigations are

crucial for detecting and preventing financial fraud, with means ranging from 4.1182 to 4.6545. The standard deviations were relatively low, indicating that responses were consistent among respondents. These findings suggest a high level of confidence in the effectiveness of forensic accounting techniques, forensic audits, and the role of forensic accountants in supporting legal proceedings related to financial fraud cases. Respondents also expressed strong agreement that forensic investigations provide valuable insights for improving internal controls, risk management practices, and developing proactive measures to prevent future fraud incidents.

Reduction of Financial Fraud

Table 2 results suggest strong agreement among respondents regarding the effectiveness of various measures in reducing financial fraud among commercial banks in South Sudan. On average, respondents strongly agreed that implementing regular forensic investigations, strengthening internal controls, providing adequate training on fraud detection and prevention, utilizing advanced technologies such as data analytics, conducting regular audits and reviews of financial transactions, collaborating with law enforcement agencies, and conducting thorough background checks on employees are all crucial in reducing financial fraud. The means for each statement were high, ranging from 4.0545 to 4.2364, indicating a high level of agreement. The standard deviations were relatively low, suggesting that responses were consistent among respondents. These findings are consistent with previous studies that emphasize the importance of these measures in combating financial fraud (Van Der Linde and Coetzee, 2018; Nyoni and Chikoko, 2017; Mala, Kamau, and Maina, 2018 and Mumo and Ongore, 2019).

The qualitative data collected from interviews and focus groups with key stakeholders such as bank managers, forensic investigators, regulatory authorities, and law enforcement agencies provided valuable insights into the perceptions and experiences of fraud, the effectiveness of forensic investigations, challenges in fraud

prevention, regulatory perspectives, and recommendations for improvement. These respondents discussed the prevalence and nature of financial fraud, the strengths and limitations of current forensic investigation practices, challenges faced in fraud prevention, regulatory frameworks governing fraud prevention, and offer recommendations for enhancing fraud prevention practices, collaboration, and regulatory frameworks. The qualitative data enriches the understanding of financial fraud complexities in commercial banks and provides actionable insights for improving fraud prevention efforts and regulatory practices.

Forensic Investigations and Reduction of Financial Fraud

The study sought to determine the relationship between forensic investigations (FI) and the reduction of financial fraud (FF) among commercial banks in South Sudan (see *Table 3*). *Table 3* illustrates the model summary for the regression analysis between strategic evaluation and school academic performance. The model summary provides information about the goodness of fit of the regression model. In this case, the R-square value of 0.334 indicates that approximately 33.4% of the variance in the reduction of financial fraud (FF) can be explained by forensic investigations (FI). The adjusted R-square, which takes into account the number of predictors in the model, is 0.328. This suggests that the model is a reasonably good fit for the data. The standard error of the estimate is 0.52425, indicating the average distance between the observed values of the dependent variable (FF) and the predicted values from the regression model. The change statistics show that adding forensic investigations as a predictor significantly improved the model, as indicated by the F change value of 54.137, which is highly significant ($p < .001$). In summary, these statistics suggest that the model with forensic investigations as a predictor is a valid and useful predictor of the reduction of financial fraud among commercial banks in South Sudan.

Table 1: Descriptive statistics on forensic investigations

Statement(s)	N	Mean	Std. Dev	Skewness		Kurtosis	
				Stat	S.E.	Stat	S.E.
Forensic investigations are crucial for detecting and preventing financial fraud in commercial banks.	110	4.3636	.72602	-.976	.230	.636	.457
I believe that forensic accounting techniques are effective in uncovering fraudulent activities.	110	4.3455	.89275	-1.452	.230	1.814	.457
Forensic audits help in identifying control weaknesses that could lead to financial fraud.	110	4.4182	.75882	-1.257	.230	1.217	.457
The implementation of forensic investigations can enhance the integrity of financial reporting in commercial banks.	110	4.4091	.83825	-1.563	.230	2.496	.457
I am confident that forensic investigations can help in recovering assets lost to financial fraud.	110	4.6545	.61236	-2.080	.230	5.226	.457
Forensic accounting plays a significant role in maintaining trust and confidence in the banking sector.	110	4.4909	.92613	-2.196	.230	4.782	.457
I feel that forensic investigations should be conducted regularly in commercial banks to deter fraudulent activities.	110	4.5273	.76277	-2.367	.230	7.593	.457
Forensic investigations provide valuable insights that can be used to improve internal controls and risk management practices.	110	4.6091	.67858	-2.021	.230	4.448	.457
I believe that forensic accountants play a crucial role in supporting legal proceedings related to financial fraud cases.	110	3.7000	1.13776	-.375	.230	-.984	.457
The findings of forensic investigations can help in developing proactive measures to prevent future financial fraud incidents.	110	4.1182	.90596	-.916	.230	.512	.457
Valid N (listwise)	110						

Table 2: Reduction of Financial Fraud

Statement(s)	N	Std. Dev	Skewness		Kurtosis	
			Stat	S.E.	Stat	S.E.
Implementing regular forensic investigations can significantly reduce financial fraud in commercial banks.	110	.95088	-1.107	.230	1.072	.457
Strengthening internal controls is crucial for mitigating the risk of financial fraud.	110	1.00308	-1.166	.230	1.086	.457
Adequate training on fraud detection and prevention can help employees identify potential fraudulent activities.	110	1.12667	-1.464	.230	1.328	.457
Utilizing advanced technologies such as data analytics can enhance fraud detection capabilities.	110	.91799	-1.215	.230	1.092	.457
Regular audits and reviews of financial transactions can help detect and prevent fraud.	109	.87806	-1.053	.231	.468	.459
Collaboration with law enforcement agencies is essential for prosecuting financial fraud cases.	110	1.11462	-.867	.230	-.156	.457
Conducting thorough background checks on employees can help prevent financial fraud.	110	1.02756	-1.115	.230	.579	.457
Valid N (listwise)	109					

The ANOVA results indicate that relationship between forensic investigations and the reduction of financial fraud is statistically significant as indicated by the F-value of 54.137, which is highly significant ($p < .001$) (see *Table 3*). The mean square for the regression model (14.879) is much larger than the mean square for the residual error (0.275), indicating that the variation explained by the regression model is much greater than the unexplained variation. In summary, these results provide strong support for the relationship between forensic investigations and the reduction of financial fraud among commercial banks in South Sudan.

The results indicate a statistically significant relationship between forensic investigations (FI) and the reduction of financial fraud (FF) among commercial banks in South Sudan. The

standardized coefficient (Beta) of 0.578 suggests that for every unit increase in forensic investigations, there is a corresponding increase of 0.578 units in the reduction of financial fraud, holding all other variables constant (see *Table 3*). The t-value of 7.358 is highly significant ($p < .001$), indicating that the relationship is not likely due to random chance. The confidence interval for the coefficient of forensic investigations ranges from 0.535 to 0.929, suggesting a relatively narrow range of values within which the true coefficient is likely to fall. Overall, these results suggest that increasing the level of forensic investigations is associated with a significant reduction in financial fraud among commercial banks in South Sudan.

$$\text{Reduction in Financial Fraud} = 0.920 + 0.732X_1$$

Table 3: Regression Results between Forensic Investigations and Reduction of Financial Fraud

Model Summary										
Model	R	R ²	Adjusted R ²	Std. Error of the Estimate	Change Statistics					
					R ² Change	F Change	df1	df2	Sig.	F Change
1	.578 ^a	.334	.328	.52425	.334	54.137	1	108	.000	
<i>a. Predictors: (Constant), FI; Dependent variable, FF</i>										
ANOVA ^a										
Model	Sum of Squares		df	Mean Square		F	Sig.			
1	Regression	14.879	1	14.879	54.137	.000 ^b				
	Residual	29.682	108	.275						
	Total	44.561	109							
<i>a. Dependent Variable: FF</i>										
<i>b. Predictors: (Constant), FI</i>										
Coefficients ^a										
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% CI for B			
		B	Std. Error				Beta	Lower	Upper	
1	(Constant)	.920	.437		2.106	.038	.054	1.786		
	FI	.732	.099	.578	7.358	.000	.535	.929		
<i>a. Predictors: (Constant), FI; b. Dependent Variable: FF</i>										

The results of the regression analysis indicate that forensic investigations (FI) have a significant positive effect on reducing financial fraud (FF) among commercial banks in South Sudan. This finding is consistent with previous studies that have highlighted the effectiveness of forensic investigations in detecting and preventing fraud in the banking sector. For example, Leksono and Hartadi (2015) found that forensic audit has a

significant impact on fraud detection in the banking industry in Indonesia. Similarly, Furlow, Mayhew, and Peck (2016) demonstrated the importance of fraud risk assessment, a component of forensic investigations, in the banking industry. These studies support the notion that forensic investigations play a crucial role in mitigating fraud risks and maintaining the integrity of the banking sector. The current study adds to this

body of literature by specifically focusing on the context of South Sudan, providing valuable insights into the effectiveness of forensic investigations in combating financial fraud in this region (Leksono & Hartadi, 2015; Furlow et al., 2016).

CONCLUSIONS AND POLICY IMPLICATIONS

The conclusions drawn from the study on the role of forensic investigations in reducing financial fraud among commercial banks in South Sudan underscore the importance of proactive measures to combat fraud. Forensic investigations play a crucial role in detecting and preventing financial fraud, but they should be part of a comprehensive strategy that includes employee training, robust policies and procedures, technology utilization, and collaboration with regulatory bodies and law enforcement agencies.

Policy implications arising from this study suggest the need for banks in South Sudan to prioritize the implementation of effective forensic practices. This includes investing in training and capacity building for staff involved in fraud detection and investigation, as well as regularly reviewing and updating forensic policies and procedures to keep pace with evolving fraud schemes. Collaboration with regulatory authorities is crucial to ensure that forensic investigations are conducted following best practices and legal requirements. Additionally, leveraging technology, such as data analytics and artificial intelligence, could enhance fraud detection capabilities and improve the efficiency of forensic investigations. Overall, the study highlights the importance of a proactive and multi-faceted approach to fraud prevention and detection in the banking sector.

Recommendations

The study on the role of forensic investigations in reducing financial fraud among commercial banks in South Sudan suggests several key recommendations to enhance fraud prevention and detection efforts. Firstly, the banks should focus on enhancing training and awareness among

employees, educating them about fraud risks and detection techniques. Secondly, the implementation of robust forensic policies and procedures is crucial, outlining clear steps for handling suspected fraud cases. Thirdly, leveraging technology, such as data analytics, could improve fraud detection capabilities. Collaboration with regulatory bodies and law enforcement agencies is also essential for sharing information and best practices. Regular audits and reviews of forensic practices could identify areas for improvement while educating customers about fraud risks can help them protect themselves. These recommendations, if implemented effectively, could significantly reduce financial fraud and enhance the overall integrity of the banking sector in South Sudan.

Suggestions for Further Research

Investigate the effectiveness of emerging technologies, such as data analytics and machine learning, in improving the efficiency and accuracy of forensic investigations in commercial banks. This could include evaluating the adoption of these technologies in forensic practices and their impact on reducing false positives and negatives in fraud detection.

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Conflict of Interest

The authors declare that there are no conflicts of interest regarding the publication of this Research Article. In addition, the ethical issues; including plagiarism, informed consent, misconduct, data fabrication and/ or falsification, double publication and/or submission, and redundancy have been completely observed by the authors.

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