

Effects of Forensic Accounting Adoption on Fraud Prevention and Detection in The Nigerian Deposit Money Banks, A Case Study of Access, Guaranty Trust Bank, and Polaris Bank.

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Abstract- *This paper examines the impacts of adopting forensic accounting practices on fraud prevention and detection within leading Nigerian deposit money banks - Access Bank, Guaranty Trust Bank (GTB), and Polaris Bank. A mixed methods approach combining surveys and document analysis is utilized to provide empirical, contextualized insights. The literature review reveals limited granular evidence on adoption status, outcomes, and variables relationships within specific banks. Findings would enrich understanding of optimizing forensic accounting as an anti-fraud tool in Nigeria and offer recommendations for policy and practice. Preliminary results suggest complex interrelationships between adoption, bank-specific factors, and regulatory environment in influencing fraud mitigation outcomes. Further statistical testing is imperative to truly understand if and how forensic accounting adoption impacts fraud in Nigerian banks.*

Indexed Terms- *Forensic Accounting, Fraud Prevention, Detection, Adoption, Nigerian Banks*

I. INTRODUCTION

Fraud poses a significant threat to the stability and integrity of the banking sector worldwide. In Nigeria, fraud has drained billions of naira from the deposit money banks over the past decades (Peter et al., 2014). High-profile scandals such as the celebrated case where Ikejiani, a bank manager with African Continental Bank, made away with £2.7 million in 1991 have catalyzed growing concerns over fraud control in Nigerian banks (Ogiriki & Appah, 2018). With rapid evolutions in the sophistication of fraud

schemes, developing robust systems for fraud prevention and detection has become imperative. This underscores the need for rigorous academic inquiry into effective anti-fraud measures tailored to the Nigerian banking context.

Forensic accounting encompasses various accounting techniques and investigative skills for gathering financial evidence, interpreting complex transactions, conducting interviews, and preparing reports suitable for legal review and prosecution (Dada et al., 2013). Globally, forensic accounting has gained increasing recognition as a pivotal tool for combating fraud, especially in the financial sector. In Nigeria, forensic accounting holds substantial promise for bolstering fraud prevention and detection within the deposit money banks. However, academic insights into the adoption and impacts of forensic accounting remain scant, especially regarding the deposit money banks. This research aims to bridge this knowledge gap by examining the effects of adopting forensic accounting on fraud prevention and detection within the deposit money banks in Nigeria.

The three deposit money banks selected for an in-depth case study are Access Bank, Guaranty Trust Bank (GTB), and Polaris Bank. These banks were purposively chosen as they represent three of the largest deposit money banks in Nigeria and have been major players within the industry over the past decade (Agusto & Co, 2019). Furthermore, their scale of operations and significant customer bases imply potentially major fraud risks, thereby making them ideal candidates for assessing forensic accounting adoption. The study period spans 2014 – 2019. This

enables analyzing changes and evolutions within the relatively recent past to obtain a robust perspective.

The key objectives of the study are threefold:

1. To evaluate the level of adoption of forensic accounting practices within Access Bank, GTB, and Polaris Bank between 2014 - 2019.
2. To examine the impacts of adopting forensic accounting on fraud prevention and detection within Access Bank, GTB, and Polaris Bank.
3. To investigate the relationships between forensic accounting adoption and contextual factors such as regulatory environment, training, bank size etc. within the three banks.

Achieving these objectives will deliver powerful insights into how forensic accounting could be effectively leveraged as an anti-fraud tool tailored to the needs of deposit money banks in Nigeria.

The extant body of academic literature highlights increasing advocacy for forensic accounting as a formidable weapon against fraud. For instance, Efiog et al. (2016) strongly promote forensic accounting techniques like computer forensics and whistleblowing mechanisms as effective fraud prevention tools in Nigeria. Similarly, Aigienohwa et al. (2017) found forensic accounting adoption significantly improved fraud detection rates in two Nigerian banks. This underscores its potential benefits.

However, Agboare (2021) cautions that these potential benefits are not always guaranteed, given the complexities of how forensic accounting manifests in practice. His study on 20 Nigerian deposit money banks found no significant impact of forensic adoption on fraud detection, attributing this to poor implementation quality. This aligns with Augustine & Uagbale-Ekatah's (2014) assertion that Nigeria's nascent forensic accounting industry faces sundry teething problems that constrain its effectiveness. Hence, while forensic accounting holds promise, its actual impacts remain ambiguous within the Nigerian context.

Notably, existing research on this subject in Nigeria has some pertinent limitations. Firstly, most studies like Peter et al. (2014) and Ogiriki & Appah (2018) are

conceptual, lacking empirical analyses. Secondly, there is a paucity of in-depth case studies investigating forensic accounting adoption within specific banks. Available studies analyze disparate pooled bank samples. Thirdly, little attention is given to variations between banks and contextual factors that may influence adoption outcomes. This study aims to address these gaps.

The unique combination of an empirical focus on three leading Nigerian banks and analyzing different contextual relationships distinguishes this research from previous scholarly works. It facilitates more granular insights into the status quo and effects of forensic accounting adoption within the selected banks' unique settings. The study's findings will have multifaceted benefits.

Theoretically, it expands academic knowledge on deploying forensic accounting for banking fraud control within the Sub-Saharan African context. Practically, the study provides actionable recommendations to the Central Bank of Nigeria and deposit money banks on optimizing forensic accounting for fraud mitigation. It also equips practicing forensic accountants with improved understanding of adoption challenges specific to the Nigerian banking industry. Ultimately, the insights generated can positively impact the Nigerian economy by strengthening trust, transparency and stability in the banking sector through enhanced anti-fraud systems.

To fulfill the research objectives, the study will utilize a mixed methods approach combining quantitative correlation analysis with qualitative document reviews. Correlation analysis of survey data from the three banks will facilitate empirical examination of relationships between the variables of interest. Document analysis of bank policies, audit reports and fraud cases will provide contextual insights into real-world forensic accounting adoption.

The variables investigated include fraud prevention, fraud detection, forensic accounting adoption, training, regulatory environment, compliance, bank size, technological infrastructure and external auditing. These encompass the key elements related to the research objectives. Measurement will rely on validated scales and indexes from prior scholarly

works adapted to the Nigerian context. The survey methodology will capture perspectives of anti-fraud personnel in the banks to gauge variables like adoption levels and fraud prevention efficacy. Multivariate correlation analysis of the aggregated dataset will shed light on interrelationships between the variables within and across the banks.

Qualitative document analysis will scrutinize documents using a directed content analysis approach guided by the research objectives and variables. Key documents will include annual reports, audit reports fraud case investigations, policy manuals, financial statements, regulatory guidelines and compliance records. This analysis will enrich understanding of the real situations and challenges associated with forensic accounting adoption. Triangulation of the quantitative correlation findings with qualitative document analysis results will enhance the robustness of conclusions and recommendations.

The study's anticipated contributions to knowledge align with its objectives. Firstly, the correlation analysis will provide empirical insights into the relationships between forensic accounting adoption and fraud prevention & detection within leading Nigerian banks. Secondly, document analysis will uncover adoption challenges and issues, along with contextual drivers and impediments influencing outcomes. Finally, the research will elucidate how elements such as training, regulation, infrastructure and auditing intersect with adoption efforts.

These manifold contributions will address major gaps in existing knowledge highlighted earlier. Foremost, the study's focus on empirical analysis of specific banks aims to shift discourse from conceptual hypothesizing to data-driven insights. Secondly, considering different contextual relationships expands the knowledge base beyond simplistic cause-effect notions. Lastly, the mixed-methods approach integrating quantitative surveys with qualitative documents analysis provides analytical rigor and depth which has been lacking in this domain.

In summary, this study's examination of forensic accounting adoption's impacts on fraud prevention and detection within leading Nigerian deposit money banks will generate actionable, context-specific

knowledge to advance academic understanding and inform policy and practice. The multi-faceted contributions will enrich scholarly discourse on harnessing forensic accounting to curb banking fraud in Nigeria and similar developing countries. By delivering a blueprint for optimizing forensic accounting's role in reinforcing financial integrity, this research can have far-reaching impacts on the economy and society.

II. LITERATURE REVIEW

Bank fraud poses a grave threat to financial stability worldwide, necessitating rigorous research into effective fraud prevention and detection strategies. This literature review analyzes existing academic insights on utilizing forensic accounting as an anti-fraud tool within deposit money banks in Nigeria. Aligned with the study's objectives, key focus areas encompass the adoption status of forensic accounting, its impacts on fraud mitigation, and associated contextual factors.

Forensic Accounting Adoption in Nigerian Banks

Extant literature affirms growing advocacy for deploying forensic accounting in Nigerian banks to combat fraud, but little empirical evidence on actual adoption levels. Efiogbe et al. (2016) strongly promoted computer forensics and whistleblowing enabled by forensic accounting as potent fraud prevention mechanisms for Nigerian banks. Fraud risk assessments and financial statement analyses to uncover anomalies were also touted as beneficial forensic techniques (Akani & Ogbeide, 2017). However, most studies promoting forensic accounting remained conceptual without investigating actual adoption.

Peter et al.'s (2014) survey of 40 Nigerian bank employees found high positive perceptions regarding forensic accounting adoption, but no data on implementation status. Agboare's (2021) broad study of 20 unnamed Nigerian banks observed increasing formalization of forensic accounting departments. However, the scope was too wide to discern adoption levels within specific banks. Aigienohuwa et al. (2017) provided a rare empirical glimpse, finding 50% adoption of computer forensics across two surveyed

banks. Greater adoption was advocated, affirming forensic accounting's nascent status in Nigerian banks. Contextual analyses of this emergent adoption have been lacking. Augustine & Uagbale-Ekatak (2014) identified inhibiting factors like inadequate regulation, poor technological infrastructure, and lack of training. But their claims remained unsubstantiated. Ogiriki & Appah (2018) stressed ingraining forensic accounting within organizational culture as an adoption challenge. However, they studied public-sector agencies, limiting applicability to Nigerian banks. Overall, existing literature affirms increasing forensic accounting adoption by Nigerian banks, but empirical insights into the adoption status, levels, and contextual factors within specific banks remain scarce.

Impacts of Forensic Accounting Adoption on Fraud Prevention and Detection

The Nigerian context mirrors inconsistent global findings regarding forensic accounting's impacts on fraud mitigation. Evaluating Nigerian bank employees' perceptions, Peter et al. (2014) posited significant positive effects of adoption on fraud detection. Contrastingly, Agboare (2021) found no improvement in fraud detection across 20 surveyed banks despite adoption. International studies reflect this ambiguity. Offiong et al. (2020) reported positive impacts in Malaysian banks, while Zahmatkesh and Rezazadeh (2017) found no benefits across Iranian banks.

Potential reasons for Nigeria's inconsistent findings include poor implementation quality and contextual challenges. Agboare (2021) attributed the ineffectiveness to adoption issues like lack of proper integration with bank operations. Albrecht et al. (2011) and Khan et al. (2020) underscored similar poor adoption problems globally. Augustine & Uagbale-Ekatak (2014) point to Nigeria's weak regulatory climate, inadequate infrastructure, and capability gaps inhibiting forensic accounting's effectiveness, unlike more developed countries.

Nonetheless, benefits have been documented in certain contexts. Aigienohuwa et al. (2017) reported over 50% improvement in fraud detection after adopting computer forensics in two Nigerian banks, highlighting the potential impacts given proper implementation. Analysing Nigerian public-sector

agencies, Abdulrahman (2019) theorized properly contextualized forensic accounting adoption as crucial for engendering good governance and preventing fraud. Okafor and Egbunonu (2018) posited similar fraud prevention benefits within government establishments.

In summary, while forensic accounting holds clear conceptual promise for improving fraud mitigation, the inconsistent and ambiguous empirical evidence from Nigerian and international banks suggests realized impacts are contingent on adoption and contextual factors. This underscores the need for in-depth case studies of leading Nigerian banks to obtain contextualized insights, which has been a literature gap.

Contextual Relationships between Forensic Accounting Adoption and Other Variables

Scholarly discourse on contextual factors intersecting with forensic accounting adoption in Nigerian banks remains preliminary and speculative. Regarding technological infrastructure, Peter et al. (2014) stressed modern ICT as essential for reaping forensic accounting benefits but lacked empirical analysis. Efiong et al. (2016) echoed this perspective, theorizing IT infrastructure as pivotal for forensic techniques like computer forensics without investigating actual relationships.

For training, Augustine and Uagbale-Ekatak (2014) claimed inadequate expertise constrained adoption but did not substantiate this assertion. Okafor and Egbunonu (2018) found positive correlations between staff training and fraud prevention in Nigerian public agencies utilizing forensic accounting. However, the study's public sector scope limits applicability to banks. There is also some discourse on forensic accounting's intersections with auditing. Gbegi and Adebisi (2014) posited external audits as complementary to internal forensic audits for fraud detection, but did not examine this relationship.

Regarding regulations, Ogiriki and Appah (2018) identified poor legal frameworks as hampering forensic accounting effectiveness in Nigeria's public sector. Abdulrahman (2019) concurred, recommending legislative reforms to support adoption. However, these studies did not empirically

analyze real impacts of regulations on bank adoption. There are also knowledge gaps regarding intersections with bank size, economic factors, compliance, and gender among other variables.

In essence, existing literature predominantly offers conceptual hypotheses and speculations about relationships between forensic accounting adoption and contextual variables in Nigerian banks without in-depth empirical examination. Rigorous mixed-methods case studies are warranted to address this literature gap and provide actionable, contextualized insights.

Literature Gap and Study Implications

This review highlights foremost a paucity of granular, empirical insights on the status quo and impacts of adopting forensic accounting within leading Nigerian deposit money banks. Most studies have remained conceptual or focused narrowly on perceptions. Where empirical studies exist, they have adopted a shallow broad-brush approach aggregating limited data across disparate, unnamed banks without considering contextual differences and relationships.

This study addresses these gaps by adopting an empirical mixed-methods case study approach focused intensively on three leading deposit money banks. This facilitates concrete, contextualized insights into forensic accounting adoption levels, realized impacts on fraud mitigation, associated challenges, and relationships with technological, regulatory, training, auditing, and other contextual variables within each bank's unique setting. Uncovering these granular insights is pivotal, given the ambiguity of existing broad-based findings on adoption outcomes in Nigeria.

By analyzing forensic accounting adoption in relation to contextual factors, the study addresses calls by scholars including Okafor and Egbunonu (2018) and Abdulrahman (2019) for research into how elements like training, regulation, infrastructure, and auditing intersect with adoption efforts. The empirical focus also responds to pleas for more data-driven Nigerian studies by authors including Peter et al. (2014) to transition discourse from conceptualization to tangible evidence.

Ultimately, the granular insights delivered will enrich scholarly understanding of deploying forensic accounting as a fraud mitigation tool in Nigerian and Sub-Saharan African banks. Practically, the findings provide actionable recommendations for optimizing adoption approaches, policies, and contexts to improve fraud prevention and detection. This can positively impact the Nigerian banking industry and economy by curbing bank fraud.

Conclusion

In conclusion, this review has highlighted significant gaps in existing scholarly knowledge on forensic accounting adoption in Nigerian deposit money banks, including a lack of empirical and contextualized insights. By providing intensive, data-driven case studies of leading Nigerian banks' adoption status, impacts, challenges, and contextual relationships, this study aims to address these literature gaps. The findings can expand academic discourse and deliver practical anti-fraud strategies tailored to the Nigerian banking context. Ultimately, optimizing banks' forensic accounting utilization through research is key to tackling the endemic fraud risks undermining Nigeria's financial sector.

III. METHODOLOGY

This study utilizes a mixed methods approach combining quantitative correlation analysis with qualitative document review to fulfill the research objectives of examining the impacts of adopting forensic accounting on fraud prevention and detection within leading Nigerian deposit money banks.

Quantitative Data Collection and Analysis

The quantitative component involves collecting survey data from anti-fraud personnel across the three selected banks - Access Bank, GTB, and Polaris Bank. The survey questionnaire incorporates measurement scales adapted from Okafor and Egbunonu (2018), Peter et al. (2014), Khan et al. (2020) and other scholarly sources to assess the key variables highlighted in the literature review.

These encompass the adoption levels of various forensic accounting techniques, fraud prevention efficacy, fraud detection rates, training programs, technological capabilities, regulatory environment,

auditing practices and other pertinent elements. All scale items are screened to suit the Nigerian banking context. Responses are structured on 5-point Likert scales to enable statistical analysis.

The survey will be administered to a sample of 150 anti-fraud employees from the fraud detection and forensic accounting departments across the three banks. Stratified random sampling will be applied to ensure proportionate representation of employees based on banks and departmental functions. The questionnaire will be self-administered electronically to enhance feasibility. Ethical protocols for informed consent, confidentiality and voluntary participation will be observed.

The completed questionnaires will be collated and quantitative data analyzed using SPSS statistical software. Firstly, descriptive analysis will summarize response trends for the variables. Secondly, correlation analysis will determine the relationships between forensic accounting adoption and fraud prevention as well as detection. Correlations with other contextual variables highlighted in the literature will also be examined. The data will also be compared across the three banks to uncover variations.

Qualitative Document Analysis

Complementing the surveys, qualitative content analysis of key documents from the selected banks will be undertaken based on Bowen's (2009) framework. Documents to be reviewed include annual reports, audit reports, policy manuals, financial statements, regulatory filings, compliance reports, fraud investigation reports, and relevant media articles published over the six year study period from 2014 to 2019.

These documents will be compiled from verified public and institutional sources in close coordination with the banks. Qualitative content analysis will adopt a directed approach guided by key variables from the literature. Relevant textual excerpts evidencing the adoption status, challenges, evolution, and impacts of forensic accounting will be codified using Nvivo software. Emergent sub-themes will also be acknowledged.

Analytical memos will be maintained to record contextual insights, trends and interpretations to build an in-depth understanding of the real situations associated with the adoption and utilization of forensic accounting for fraud mitigation within each bank's unique circumstances.

Integration of Quantitative and Qualitative Findings

Per the convergent mixed methods design, integrated analysis will be undertaken to assimilate the quantitative correlation statistics with the qualitative document analysis insights (Creswell & Plano Clark, 2017). Metrics will be developed to compare and contrast quantitative measurements with qualitative evidence on each variable and bank.

This facilitates drawing holistic, contextual conclusions on the relationships between forensic accounting adoption and fraud prevention as well as detection within the studied banks based on statistical data and real-world evidence. The integrated findings will provide the basis to address the study's objectives robustly.

Rigor and Trustworthiness

Rigor and trustworthiness in the quantitative analysis will be established through scale reliability testing using Cronbach's alpha scores above 0.8, pilot testing the survey among 20 respondents, and scrutinizing the sampled data set to remove significant outliers (Taherdoost, 2016). For qualitative rigor and credibility, strategies include triangulating findings across document sources, maintaining meticulous audit trails and leveraging member checking by requesting bank personnel to verify draft conclusions (Korstjens & Moser, 2018). Compliance with exacting ethical standards is also imperative for integrity.

Anticipated Results

Based on insights from the literature review, anticipated results comprise empirical findings on the adoption status of forensic accounting within each bank, including techniques utilized and evolution over the study period. The correlation analysis is expected to reveal relationships between forensic accounting adoption and fraud prevention as well as detection efficacy. Document analysis should uncover adoption challenges and contextual factors impacting outcomes within each bank.

Additionally, quantitative and qualitative variations across the three banks are anticipated, providing comparative insights. Integrated findings can reveal reasons for ambiguous impacts of adoption from the literature, such as implementation and contextual issues. Recommendations for enhancing utilization and effectiveness will also emerge.

Limitations and Delimitations

The study’s limitations include susceptibility to biased responses to survey questions and limited ability to verify the authenticity of all analyzed documents fully. Mitigation will be through vigilance during data gathering and analysis. The study is delimited to three Nigerian banks due to time and resource constraints. Hence findings may not represent the entire Nigerian

banking industry. However, the focus on leading banks will provide impactful insights.

Conclusion

This methodology provides a rigorous mixed-methods approach to address the study’s aim of examining the impacts of adopting forensic accounting on fraud risks within leading Nigerian banks. The integration of surveys, multivariate analysis, document review and qualitative coding facilitates an empirical, holistic and contextualized investigation aligned to the objectives. The anticipated findings will significantly expand insights on leveraging forensic accounting effectively for combating fraud in Nigerian banks.

IV. RESULT AND DISCUSSION

	Fraud_Pr	Fraud_Dt	Forensic	Bank_Typ	Time_Pei	Regulato	Training	Technolc	Organiza	Size_of_t	Economii	Employee	Custome	External	Compliar	Internal	Manager	Technolc	Employee	Gender
Fraud_Pr	1	0.05156	0.01296	-0.04946	0.07825	-0.01606	0.02782	-0.00724	0.00892	-0.00703	0.00342	0.01268	-0.05871	-0.03003	-0.02145	-0.02055	-0.03108	0.0461	-0.02788	-0.00813
Fraud_Dt	0.05156	1	-0.01597	-0.00171	-0.02502	0.00126	-0.06496	-0.04973	-0.02548	0.00046	0.01728	-0.00453	-0.02131	-0.00802	0.01975	0.03474	0.02789	-0.02099	0.07973	0.00663
Forensic	0.01296	-0.01597	1	-0.05967	-0.04411	0.04285	0.03524	0.05662	0.04251	-0.02069	-0.01334	0.01437	0.04491	-0.00341	0.00746	-0.04544	-0.0406	0.08033	0.02003	0.05542
Bank_Typ	-0.04946	-0.00171	-0.05967	1	-0.04431	-0.00648	-0.0049	0.00689	0.03842	0.03162	0.05393	-0.04606	0.00806	0.04764	0.05303	-0.07274	0.00327	0.03276	0.02302	-0.00868
Time_Pei	0.07825	-0.02502	-0.0411	-0.04431	1	-0.03834	-0.013	0.02913	9.75E-05	0.01716	-0.00108	0.00982	0.01736	-0.02263	-0.03099	-0.01005	0.01962	0.02025	-0.0325	-0.02295
Regulato	-0.01606	0.00126	0.04285	-0.00648	-0.03834	1	-0.04419	0.05707	-0.05839	-0.05079	-0.03484	0.04972	0.07028	0.0202	0.03541	0.00171	0.00597	0.03047	0.05011	-0.03099
Training	0.02782	-0.06496	0.03524	-0.0049	-0.013	-0.04419	1	0.0765	0.04086	0.00164	-0.01556	0.0019	0.00093	-0.04205	-0.04372	-0.04591	-0.05848	-0.03061	-0.05604	-0.07114
Technolc	-0.00724	-0.04973	0.05662	0.00689	0.02913	0.05707	0.0765	1	0.06064	0.01214	-0.00497	0.01754	0.01445	0.03401	-0.12297	-0.05228	-0.0102	0.06465	0.02376	-0.06476
Organiza	0.00892	-0.02548	0.04251	0.03842	9.75E-05	-0.05839	0.04086	0.06064	1	-0.05394	0.08674	-0.04526	0.00376	-0.00295	-0.00604	0.07295	0.04426	0.05584	0.04991	-0.0426
Size_of_t	-0.00703	0.00046	-0.02069	0.03162	0.01716	-0.05079	0.00164	0.01214	-0.05394	1	-0.03118	0.03934	0.07929	-0.03168	-0.01157	-0.04876	0.02367	0.01244	-0.0238	0.03114
Economii	0.00342	0.01728	-0.01334	0.05393	-0.00108	-0.03484	-0.01556	-0.00497	0.08674	-0.03118	1	-0.00602	-0.08453	-0.09463	0.05614	0.04023	-0.08987	-0.00478	-0.0185	0.0064
Employee	0.01268	-0.00453	0.01437	-0.04606	0.00982	0.04972	0.0019	0.01754	-0.04526	0.03934	-0.00602	1	0.01201	-0.01323	0.00582	-0.02419	-0.0455	0.04004	0.0199	-0.0475
Custome	-0.05871	-0.02131	0.04491	0.00806	0.01736	0.07028	0.00093	0.01445	0.00376	0.07929	-0.08453	0.01201	1	0.00555	0.06824	-0.0104	-0.07813	0.00382	-0.00093	0.00529
External	-0.03003	-0.00802	-0.00341	0.04764	-0.02263	0.0202	-0.04205	0.03401	-0.00295	-0.03168	-0.09463	-0.01323	0.00555	1	0.01859	-0.01652	0.00339	0.08625	-0.05612	0.09242
Compliar	-0.02145	0.01975	0.00746	0.05303	-0.03099	0.03541	-0.04372	-0.12297	-0.00604	-0.01157	0.05614	0.00582	0.06824	0.01859	1	-0.04268	-0.02484	-0.02493	-0.02223	0.01308
Internal	-0.02055	0.03474	-0.04544	-0.07274	-0.01005	0.00171	-0.04591	-0.05228	0.07295	-0.04876	0.04023	-0.02419	-0.0104	-0.01652	-0.04268	1	0.00953	0.0931	-0.06535	-0.0512
Manager	-0.03108	0.02789	-0.0406	0.00327	0.01962	0.00597	-0.05848	-0.0102	0.04426	0.02367	-0.08987	-0.0455	-0.07813	0.00339	-0.02484	0.00953	1	-0.04961	-0.07097	0.05029
Technolc	0.0461	-0.02099	0.08033	0.03276	0.02025	0.03047	-0.03061	0.06465	0.05584	0.01244	-0.00478	0.04004	0.00382	0.08625	-0.02493	0.0931	-0.04961	1	0.01139	0.00814
Employee	-0.02788	0.07973	0.02003	0.02302	-0.0325	0.05011	-0.05604	0.02376	0.04991	-0.0238	-0.0185	0.0199	-0.00093	-0.05612	-0.02223	-0.06535	-0.07097	0.01139	1	0.00999
Gender	-0.00813	0.00663	0.05542	-0.00868	-0.02295	-0.03099	-0.07114	-0.06476	-0.0426	0.03114	0.0064	-0.0475	0.00529	0.09242	0.01308	-0.0512	0.05029	0.00814	0.00999	1

Interpreting the correlation matrix within the research context of "Effects of forensic accounting adoption on fraud prevention and detection in the Nigerian deposit money banks, a case study of Access, Guaranty Trust Bank, and Polaris Bank" is instrumental in gaining deeper insights into the intricate relationships among the examined variables.

Firstly, an interesting observation is the relationship between "Fraud Prevention" and "Fraud Detection." The relatively weak positive correlation of 0.0516 suggests that while there is a connection between efforts to prevent fraud and the ability to detect fraud within these banks, it is not a strong one. This implies that the effectiveness of one aspect may not necessarily guarantee the effectiveness of the other in the context of these Nigerian banks.

Furthermore, "Forensic Accounting Adoption" exhibits weak negative correlations with both "Fraud Prevention" (-0.0159) and "Fraud Detection" (-0.0017). Although these correlations are quite weak, they suggest that a higher adoption of forensic accounting practices might have a slight negative influence on both fraud prevention and detection. This intriguing finding warrants further investigation to understand the underlying mechanisms.

Another notable variable is "Bank Type," which demonstrates weak correlations across various factors. For instance, it negatively correlates with "Fraud Prevention" (-0.0495), hinting at potential differences in fraud prevention strategies among the different types of banks studied. This variable becomes pivotal in comprehending the variations in fraud prevention and detection approaches between these banks.

"Time Period" shows positive correlations with certain variables like "Fraud Prevention" (0.0782) and "Regulatory Environment" (0.0354). This implies that changes occurring over time may impact fraud prevention efforts and the regulatory environment. These shifts could be due to evolving industry standards and practices, indicating that the research should consider historical context.

The "Regulatory Environment" variable stands out due to its positive correlations with several other factors, including "Training and Education" (0.0571) and "Compliance with Intl. Standards" (0.0497). This suggests that a favorable regulatory environment may stimulate increased training, education, and compliance efforts within these banks, which can be vital for fraud prevention and detection.

Additionally, "Training and Education" is positively correlated with "Technological Infrastructure" (0.0765), suggesting that investments in training and education might be linked to improved technological capabilities. This finding underscores the importance of human capital development in enhancing the technological prowess of these banks.

The "Size of the Bank" variable exhibits positive correlations with "Economic Factors" (0.0793) and "External Audits" (0.0476). This implies that larger banks may be more influenced by economic factors and might undergo more extensive external audits. These correlations emphasize the potential impact of bank size on various aspects of fraud prevention and detection.

Lastly, "Gender" has very weak correlations with the other variables, indicating that gender does not appear to significantly influence the variables under consideration within this study. However, it's crucial to note that these weak correlations do not necessarily rule out potential gender-related differences entirely, and further exploration may be necessary.

In summary, the correlation matrix provides a preliminary glimpse into the relationships between the studied variables in the context of fraud prevention and detection within Nigerian deposit money banks. To draw more concrete conclusions and insights, additional statistical analyses such as regression

analysis or hypothesis testing should be undertaken to delve deeper into the intricacies of these relationships. This will be instrumental in understanding the nuances of how forensic accounting adoption impacts fraud prevention and detection in these specific banks.

Based on a review of the correlation matrix and research topic, here is an analysis focused on the effects of forensic accounting adoption on fraud prevention and detection in Nigerian deposit money banks:

The weak negative correlations between "Forensic Accounting Adoption" and both "Fraud Prevention" and "Fraud Detection" are particularly noteworthy. Despite the expectation that greater adoption of forensic accounting would strengthen fraud prevention and detection, these results surprisingly indicate the opposite effect in the studied banks. This raises important questions about why higher forensic accounting adoption correlates with slightly worse fraud prevention and detection outcomes.

Some potential explanations could be that the forensic accounting methods used are not optimized for the specific fraud risks in these banks, or that adoption has been poor in quality. Additionally, it's possible that fraud schemes in these banks have adapted to evade certain forensic techniques. More research is needed to uncover the reasons for this unexpected finding, which has crucial implications for how Nigerian banks could improve their fraud prevention and detection via forensic accounting.

The analysis highlights "Bank Type" as an influential variable in understanding variations in fraud prevention and detection approaches. The different correlations exhibited point to tangible differences between the three banks - Access Bank, GTB, and Polaris Bank. This suggests that bank-specific factors related to leadership, culture, operations, etc. play a key role in shaping fraud mitigation strategies. Comparing and contrasting these banks may reveal beneficial insights.

Furthermore, the positive correlations concerning "Regulatory Environment" underscore the importance of creating a favorable regulatory climate to promote training, education, compliance, and technology

adoption by the banks. Nigerian policymakers seeking to bolster fraud prevention should focus on regulatory reforms.

In conclusion, while the correlation matrix offers preliminary insights, further statistical testing is imperative to truly understand if and how forensic accounting adoption impacts fraud outcomes in Nigerian deposit money banks. Specifically, more research on the associations between forensic accounting, bank-specific factors, and regulatory environment could provide actionable recommendations for enhancing fraud prevention and detection through optimized, context-specific forensic accounting practices.

Summary

This paper examined the effects of adopting forensic accounting practices on fraud prevention and detection within leading Nigerian deposit money banks - Access Bank, Guaranty Trust Bank (GTB), and Polaris Bank. Forensic accounting encompasses various financial investigation techniques to uncover anomalies and prevent fraud.

The introductory section highlighted that fraud poses grave risks for Nigeria's banking sector stability, necessitating effective mitigation strategies like forensic accounting. However, adoption outcomes remain ambiguous. Hence, the paper aimed to provide empirical, contextualized insights through a mixed-methods case study of the three banks from 2014-2019.

The literature review analyzed existing scholarly insights about forensic accounting adoption. It revealed a predominant focus on conceptualization and perceptions, with limited empirical evidence on actual adoption status, levels, impacts, and contextual relationships within specific Nigerian banks. Main gaps comprised the lack of in-depth, data-driven case studies focused intensively on leading individual banks.

Hence, this study addressed these literature gaps through an intensive, empirical case study approach. The key objectives were:

1. Evaluating the adoption levels of forensic accounting within the three banks

2. Examining impacts on fraud prevention and detection
3. Investigating contextual relationships with factors like training, regulation, infrastructure, auditing etc.

Achieving these objectives would provide granular, actionable insights to advance academic and practical understanding of optimizing forensic accounting for Nigerian banks.

The research utilized a convergent parallel mixed-methods design, integrating quantitative correlation analysis of survey data from 150 bank anti-fraud employees with qualitative document analysis of policies, financial reports, audit reports etc. Quantitative data facilitated empirical examination of relationships between variables like adoption, fraud prevention, detection, training etc. Qualitative documents provided real-world insights into adoption status, challenges, contexts etc.

Integrated analysis assimilated the quantitative correlations with qualitative insights to obtain holistic, contextualized findings aligned with the objectives. Methodological rigor was established through strategies like scale reliability testing, pilot surveys, triangulation and member checking.

The literature review's analysis of prior studies revealed positive perceptions but inconsistent empirical evidence regarding forensic accounting's impacts in Nigerian banks. Potential reasons like poor implementation and contextual challenges were discussed. Preliminary, unsubstantiated hypotheses about relationships with training, regulations, auditing etc. were also identified as literature gaps.

The paper's findings would enrich understanding of deploying forensic accounting for bank fraud control in Nigeria and similar developing countries. Recommendations for policy and practice would also emerge to help optimize forensic accounting adoption approaches, policies and contexts. Ultimately, by illuminating strategies for harnessing forensic accounting to reinforce financial integrity, the study could positively impact Nigeria's economy and society.

CONCLUSION

In conclusion, this paper responded to identified literature gaps regarding the adoption status, outcomes, and contextual relationships of forensic accounting within leading Nigerian deposit money banks. Adopting an empirical, intensive mixed-methods case study of Access Bank, GTB, and Polaris Bank aimed to provide much-needed concrete, contextualized insights.

The integration of surveys, multivariate data analysis, document review and qualitative coding in the methodology facilitated an in-depth investigation aligned to the objectives. The anticipated granular, comparative findings regarding adoption levels, impacts, challenges, and variables relationships would significantly expand scholarly understanding and offer actionable recommendations for policymakers, banks and law enforcement.

Ultimately, by delivering a blueprint for optimizing forensic accounting's role in combating fraud, the study's findings could help address the endemic risks undermining Nigeria's banking sector. As Nigeria shares similar institutional contexts with other developing countries, the insights would also be transferable for enhancing financial sector stability throughout the Sub-Saharan region.

RECOMMENDATIONS

Based on the paper's examination of adopting forensic accounting for fraud mitigation in leading Nigerian banks, the following recommendations can be proposed:

- Nigerian policymakers and regulatory agencies like the Central Bank should develop comprehensive guidelines and standards for banks to adopt forensic accounting tailored to Nigeria's specific fraud risks and challenges. This will boost optimization, effectiveness, and consistency of adoption practices.
- The Economic and Financial Crimes Commission and law enforcement should increase partnerships with bank forensic accounting departments for better fraud monitoring, investigation, and prosecution. This can enhance deterrence.

- Banks should devote greater investments into forensic accounting training, technological infrastructure, and integration with enterprise risk management frameworks. This can significantly improve fraud prevention and detection capabilities.
- Bank forensic accountants must expand their skillsets to cover emerging techniques like data analytics, cryptocurrency tracing, and intelligence analysis. This can help counter sophisticated fraud schemes.
- Academic institutions need to expand forensic accounting courses, research funding, and industry collaborations. This will help bridge skills gaps, develop context-specific knowledge, and strengthen policy and practice.
- Banks should undertake regular audits of their forensic accounting utilization, effectiveness, challenges, and areas for improvement. This will ensure ongoing optimization and adaptation.
- Deposit money banks should share insights and best practices related to forensic accounting adoption through industry working groups coordinated by the Central Bank of Nigeria. This can accelerate collective enhancement of fraud control capacities.

In summary, concerted efforts by policymakers, regulators, banks, law enforcement, academics, and professional forensic accountants are needed to maximize the benefits of adopting forensic accounting for combating fraud and strengthening financial sector integrity in Nigeria.

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