



Research Article

## Forensic Auditing in a Glocalized Commercial Hub: Perspectives from Onitsha Metropolis

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### About Article

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### ABSTRACT

As commercial activities in sub-Saharan Africa transition into "glocalized" models, where local market dynamics intersect with global supply chains, the risk of sophisticated financial fraud continues to escalate. Against this background, this study investigated the efficacy of forensic auditing as a mechanism for mitigating financial crimes within the glocalized commercial environment of the Onitsha Metropolis, Nigeria. The research was necessitated by the widening gap between sophisticated modern fraud mechanisms and traditional auditing techniques in a hub where local market traditions intersect with global digital trade. Anchored on the Fraud Diamond Theory and Cybernetics Theory, the study examined four dimensions: forensic investigative skills, digital forensic technologies, litigation support, and internal control integration. A descriptive survey research design was adopted, utilizing a purposive sample of 150 professionals, including forensic accountants, internal auditors, and managers. Data were analyzed using Pearson Correlation and Multiple Regression Analysis via SPSS version 27. The empirical results revealed that forensic auditing dimensions collectively explain 74.6% of the variance in fraud management within the metropolis ( $R^2=0.746$ ). Specifically, digital forensic technologies and artificial intelligence emerged as the strongest predictors of fraud prevention ( $\beta=0.405, p<0.05$ ). The study also found significant positive relationships between investigative skills and fraud detection, litigation support and successful prosecution, and the integration of forensic techniques into internal controls and business sustainability. The study concludes that forensic auditing is an indispensable feedback mechanism for maintaining financial integrity in high-velocity, hybrid commercial hubs. It recommends that enterprises in Onitsha transit from manual oversight to AI-powered forensic tools and that professional bodies prioritize periodic investigative training to bridge the "technological lag" currently exploited by fraudsters.

## 1.0 INTRODUCTION

The contemporary global financial landscape is increasingly characterised by the phenomenon of glocalisation, where international economic trends and local market specificities converge to create complex commercial ecosystems. In this environment, the prevalence of financial irregularities and sophisticated fraud schemes has necessitated a shift from traditional auditing practices to more rigorous investigative mechanisms. According to Odum and Odum (2024), forensic auditing and investigation have become essential components of the modern accounting profession, providing the depth required to uncover concealed financial malpractices that statutory audits might overlook. As commercial activities expand beyond borders, the integration of global standards with local economic realities requires a robust forensic framework to maintain financial integrity.

The Onitsha Metropolis, situated in South-East Nigeria, serves as a quintessential glocalised commercial hub. As home to one of the largest market clusters in West Africa, it acts as a critical node in global supply chains while maintaining deeply rooted local trade traditions. However, the sheer volume of transactions and the hybrid nature of its commerce make it susceptible to diverse financial crimes. Johnson et al. (2024) posit that internal control systems are the primary means of preventing fraud in financial institutions and large-scale enterprises, yet these systems are frequently bypassed in high-pressure commercial environments. When internal controls fail, forensic accounting techniques become the secondary line of defence. Ijeoma (2015) notes that the application of forensic accounting is vital in

curbing creative accounting practices, which are often used to distort the financial health of businesses operating within such competitive hubs.

Technological advancement has further redefined the nature of financial surveillance and fraud detection. The transition towards digital innovation in Nigerian auditing provides significant opportunities for urban commercial centres to enhance their transparency (Okafor & Nwachukwu, 2022). Scholars have argued that the traditional methods of fraud detection, such as ratio analysis, remain relevant but must be augmented with modern tools. Okoye and Ezejiofor (2021) demonstrate that while ratio analysis is effective in identifying financial statement fraud, the complexity of modern transactions requires a more technologically driven approach. In this regard, the role of artificial intelligence (AI) in transforming accounting and auditing practices cannot be overstated, as it allows for the real-time processing of vast amounts of data (Abdo-Salloum & Chehade, 2026).

The emergence of disruptive technologies such as blockchain and machine learning has introduced a new paradigm in forensic auditing. Hossain (2026) proposes a hybrid fraud detection framework that integrates blockchain and machine learning to address environmental, social, and governance (ESG) risk indicators. Similarly, Nogara (2026) emphasizes the importance of teaching business process modelling notation to facilitate the use of AI methods in detecting accounting fraud. In the Nigerian context, the prospects of AI in forensic accounting offer a promising avenue for mitigating the limitations of manual oversight (Nwachukwu & Obigwe, 2023). These digital technologies

are increasingly being deployed within government ministries and public sectors to ensure accountability (Chika et al., 2026; Vitalis et al., 2025).

In the South-East region, the sustainability and operational efficiency of small and medium-scale businesses are heavily influenced by their ability to adopt these technological advancements (Ndubuisi-Okolo et al., 2025). Furthermore, the synergy between AI and human capital management is crucial for achieving sustainable performance in glocalised markets (Ndum et al., 2025). Despite the benefits of international frameworks like the International Financial Reporting Standards (IFRS), which have impacted stock market movements and corporate reporting in Nigeria, local implementation challenges persist (Okoye et al., 2014). For instance, forensic audit practices in public institutions still face hurdles related to the components of forensic accounting and the specific institutional environment (Akanbi & Oputeh, 2026; Chukwu et al., 2025).

The commercial vibrancy of the Onitsha Metropolis, coupled with the rising complexity of glocalised trade, demands a forensic auditing perspective that is both technologically advanced and locally relevant. Maharani and Utomo (2026) suggest that technology and specific drivers of fraud prevention must be understood within the public and private sectors to create a secure economic environment. Additionally, as electronic income streams become more prevalent among listed deposit money banks and large enterprises, the risks associated with disruptive technologies must be managed through forensic vigilance (Eze et al., 2024). This study, therefore, seeks to

explore the perspectives of forensic auditing in the Onitsha Metropolis, examining how this glocalised hub can leverage investigative accounting to secure its financial future.

### **1.1 Statement of the Problem**

The rapid evolution of the Onitsha Metropolis into a glocalised commercial hub has created a complex financial environment where local market traditions intersect with global digital trade. However, this economic expansion has been accompanied by a sophisticated surge in financial crimes, ranging from procurement fraud to intricate creative accounting schemes. The fundamental problem lies in the widening gap between the sophistication of these modern fraud mechanisms and the traditional auditing techniques currently employed within this commercial centre. While statutory audits are designed to ensure compliance, they often lack the investigative depth required to detect deliberate financial distortions in a high-velocity trade environment. Odum and Odum (2024) argue that without the specific skills inherent in forensic investigation, many financial irregularities remain embedded within the corporate books, undetected by routine oversight.

Furthermore, the internal control systems within many commercial enterprises and financial institutions in the region have proven insufficient in the face of glocalised pressures. Johnson et al. (2024) observe that even when internal controls are present, they are frequently compromised or bypassed by individuals with high technical capability. This vulnerability is exacerbated by the reliance on traditional ratio analysis, which, although relevant for general financial assessment, often fails to signal the underlying presence of fraudulent intent

(Okoye & Ezejiofor, 2021). Consequently, the absence of a proactive forensic culture leads to significant financial leakages that threaten the sustainability of both private businesses and public institutions.

The technological transition within the Nigerian auditing space presents another layer of the problem. While digital innovation offers opportunities for transparency, the slow adoption of artificial intelligence and digital forensic tools in urban commercial centres like Onitsha creates a "technological lag" that fraudsters exploit (Okafor & Nwachukwu, 2022). Although scholars highlight the transformative potential of AI in auditing (Abdo-Salloum & Chehade, 2026), its practical application in the forensic investigation of the public sector and large-scale informal markets remains limited (Chika et al., 2026; Chukwu et al., 2025). This lag is particularly concerning as businesses migrate towards electronic income streams and disruptive technologies, which introduce new vectors for financial crime (Adebogun et al., 2025; Eze et al., 2024).

Moreover, there is a distinct lack of empirical focus on how forensic auditing components can be specifically adapted to the "glocal" nature of the Onitsha Metropolis. Current forensic practices often struggle to bridge the divide between formal international trade standards, such as IFRS, and the deeply rooted local informal transaction systems (Okoye et al., 2014; Akanbi & Oputeh, 2026). Without a clear framework for integrating forensic accounting with modern AI-driven tools and local market dynamics, the financial integrity of the Onitsha commercial hub remains at risk. This study, therefore, addresses the urgent need to evaluate the perspectives and efficacy of forensic auditing

in mitigating fraud within this unique glocalised environment.

## 2.0 OBJECTIVES OF THIS STUDY

The primary objective of this study is to assess the efficacy of forensic auditing as a mechanism for mitigating financial crimes within the glocalised commercial environment of the Onitsha Metropolis. Specifically, the study sought to achieve the following:

1. To examine the impact of forensic investigative skills on the detection of sophisticated fraud schemes among commercial enterprises in the Onitsha Metropolis.
2. To determine the role of digital forensic technologies and artificial intelligence in enhancing the prevention of financial irregularities within the Onitsha commercial hub.
3. To evaluate the relationship between forensic litigation support and the successful prosecution of financial crimes and recovery of misappropriated funds within the Onitsha Metropolis.
4. To investigate the extent to which the integration of forensic auditing techniques into internal control systems improves the financial sustainability of businesses in the Onitsha Metropolis.

## 2.1 Research Questions

1. To what extent do forensic investigative skills impact the detection of sophisticated fraud schemes among commercial enterprises operating within the Onitsha Metropolis?
2. What is the role of digital forensic technologies and AI in enhancing the

prevention of financial irregularities within the glocalised commercial hub of Onitsha?

3. How does forensic litigation support influence the successful prosecution of financial crimes and the recovery of misappropriated funds within the Onitsha Metropolis?
4. To what degree does the integration of forensic auditing techniques into internal control systems improve the long-term financial sustainability of businesses in the Onitsha Metropolis?

### Hypotheses

Based on the research objectives and the variables under investigation, the following hypotheses were formulated in the null form to guide the statistical testing:

**H01:** Forensic investigative skills do not significantly impact the detection of sophisticated fraud schemes among commercial enterprises in the Onitsha metropolis.

**H02:** Digital forensic technologies and artificial intelligence do not play a significant role in enhancing the prevention of financial irregularities within the Onitsha commercial hub.

**H03:** There is no significant relationship between forensic litigation support and the successful prosecution of financial crimes or the recovery of misappropriated funds within the Onitsha metropolis.

**H04:** The integration of forensic auditing techniques into internal control systems does not significantly improve the financial sustainability of businesses in the Onitsha metropolis.

## 3.0 CONCEPTUAL DISCUSSION

### 3.1 The Concept of Forensic Auditing

Forensic auditing represents a specialised field of accounting that merges financial expertise with investigative techniques to produce evidence suitable for use in a court of law. Unlike statutory auditing, which primarily focuses on providing an opinion on the fairness of financial statements, forensic auditing is inherently reactive and investigative. Odum and Odum (2024) posit that the essence of forensic investigation lies in its ability to uncover hidden financial malpractices and provide a detailed analysis of how such crimes were perpetrated. This investigative depth is essential for identifying creative accounting practices, which Ijeoma (2015) defines as the systematic manipulation of financial records within the limits of accounting standards to present a biased view of an organisation's performance.

The components of forensic accounting are diverse, encompassing fraud prevention, criminal investigation, and litigation support. According to Akanbi and Oputeh (2026), these components must be tailored to the specific administrative and legal environment of the region in question. In urban commercial centres, the forensic auditor acts as a financial detective, utilising advanced analytical skills to trace misappropriated funds and identify the culprits behind complex white-collar crimes.

#### 3.1.1 The Glocalised Commercial Hub: Onitsha Metropolis

The term "glocalization" refers to the simultaneous occurrence of both universalising and particularising tendencies within a specific geographical location. The Onitsha Metropolis serves as a quintessential glocalised hub, where local market traditions,

such as the apprenticeship system and informal credit networks, intersect with global trade dynamics and international procurement processes. This hybrid environment creates unique opportunities for economic growth but also presents sophisticated avenues for financial crime. Okafor and Nwachukwu (2022) observe that digital innovation in Nigerian auditing is particularly critical for these urban commercial centres, as they act as conduits for both domestic and international financial flows.

Operating within such a hub requires adherence to global reporting benchmarks. Okoye et al. (2014) highlight that the adoption of International Financial Reporting Standards (IFRS) has significantly influenced corporate reporting and stock market movements in Nigeria, yet the local application of these standards in markets like Onitsha often faces challenges due to the informal nature of many transactions. Consequently, forensic auditing in this context must bridge the gap between global transparency requirements and local commercial realities.

### **3.1.2 Technology, Artificial Intelligence, and Forensic Auditing**

The integration of technology has redefined the landscape of forensic investigation. Modern auditors are increasingly moving away from manual ledger reviews towards digital forensic tools. Abdo-Salloum and Chehade (2026) argue that artificial intelligence (AI) is transforming the accounting profession by enabling the systematic review of massive datasets to identify anomalies. The prospects of AI in Nigerian forensic accounting are vast, offering the potential to automate fraud detection and reduce the time required for complex investigations (Nwachukwu & Obigwe, 2023).

Furthermore, the emergence of disruptive technologies has introduced new risks and opportunities. Eze et al. (2024) note that the rise of electronic income and digital banking platforms necessitates advanced forensic vigilance to protect the assets of listed deposit money banks. To combat these risks, Hossain (2026) proposes a hybrid fraud detection framework that integrates blockchain and machine learning, ensuring that every transaction is immutable and traceable. This technological shift is also evident in the public sector, where digital technologies are being deployed in government ministries to enhance accountability and curb the embezzlement of public funds (Chika et al., 2026).

### **3.1.3 Internal Controls and Fraud Prevention Mechanisms**

While forensic auditing is often corrective, its integration into internal control systems provides a proactive defence against financial crime. Johnson et al. (2024) emphasize that a robust internal control system is the most effective means of preventing fraud within financial institutions. However, the effectiveness of these controls is often undermined by the technical "capability" of fraudsters to bypass them. To address this, Maharani and Utomo (2026) suggest that technology-driven fraud prevention must be a priority for both public and private sector organisations.

In the Onitsha commercial hub, the sustainability of small and medium-scale businesses is intrinsically linked to their operational efficiency and their ability to adopt AI-driven security measures (Ndubuisi-Okolo et al., 2025). Moreover, the synergy between human capital management and AI is vital for maintaining long-term performance in competitive markets (Ndum et al., 2025).

Traditional methods, such as ratio analysis, remain relevant for identifying red flags in financial statements, but they must be supported by forensic audit practices to be truly effective in a modern commercial setting (Okoye & Ezejiofor, 2021; Chukwu et al., 2025). Finally, teaching advanced notations, such as business process modelling, can empower forensic professionals to use AI more effectively in mapping out and detecting fraudulent pathways (Nogara, 2026).

### 3.1.4 Empirical Review

Ijeoma (2015) conducted an empirical analysis on the use of forensic accounting techniques in curbing creative accounting, concluding that the application of forensic skills is significantly effective in uncovering deliberate misstatements that traditional auditors might overlook. This is corroborated by Odum and Odum (2024), who argue that the investigative nature of forensic auditing provides a more rigorous approach to identifying financial crimes in complex economic environments. In the Nigerian public sector, Akanbi and Oputeh (2026) investigated the components of forensic accounting in Oyo State and found that investigative skills and litigation support are primary drivers for improving accountability. Similarly, Chukwu et al. (2025) established a positive correlation between forensic audit practices and fraud prevention in public institutions, suggesting that proactive forensic engagements reduce the incidence of fund misappropriation.

Okafor and Nwachukwu (2022) examined digital innovation in Nigerian auditing and found that urban commercial centres benefit significantly from the transition to automated oversight. The role of artificial intelligence (AI) has been further explored by Abdo-

Salloum and Chehade (2026), whose systematic review indicates that AI enhances the precision of auditing practices by identifying patterns of fraud that are invisible to human investigators. Within the Nigerian context, Nwachukwu and Obigwe (2023) explored the prospects of AI in forensic accounting, noting that while the potential for fraud detection is immense, the lack of infrastructure remains a hurdle.

The application of specific AI frameworks has also been documented. Hossain (2026) developed a hybrid fraud detection framework integrating blockchain and machine learning, demonstrating that technological synergy significantly mitigates risks related to environmental, social, and governance factors. Furthermore, Nogara (2026) empirically tested the teaching of business process modelling for AI-based fraud detection, highlighting that the technical capability of the investigator is a critical success factor. In Rivers State, Chika et al. (2026) found that digital technologies in government ministries have improved the forensic trail of public expenditure, thereby reducing the opportunities for administrative fraud.

Johnson et al. (2024) investigated internal control systems in Nigerian financial institutions, finding that such systems are instrumental in preventing fraud but require forensic oversight to handle sophisticated breaches. The relevance of analytical tools like ratio analysis was tested by Okoye and Ezejiofor (2021), who found that while ratios are effective for detecting financial statement fraud, they must be combined with forensic investigations to be conclusive.

Regarding regional economic stability, Ndubuisi-Okolo et al. (2025) examined the

impact of AI on the sustainability of small and medium-scale businesses in South-East Nigeria, concluding that operational efficiency is significantly enhanced when digital security measures are adopted. This aligns with the findings of Ndum et al. (2025), who established that the interaction between AI and human capital is essential for sustainable performance in high-volume commercial hubs. Furthermore, Eze et al. (2024) observed that disruptive technologies significantly affect the electronic income of listed deposit money banks, necessitating advanced forensic monitoring to prevent cyber-financial crimes.

### 3.1.5 Empirical Gap and Glocalized Context

Despite the extensive research on forensic auditing and technology, there is a scarcity of studies focusing specifically on the Onitsha Metropolis as a glocalised commercial hub. While Okoye et al. (2014) discussed the impact of IFRS adoption on stock market movements, their study did not address the forensic challenges unique to hybrid markets where formal and informal trade systems converge. Maharani and Utomo (2026) provided a scoping review of technology drivers in fraud prevention but did not contextualise these findings within the specific dynamics of West African urban trade centres. Consequently, this study bridges the empirical gap by examining how forensic auditing can be adapted to the unique socio-economic landscape of the Onitsha Metropolis.

## 4.0 THEORETICAL FRAMEWORK

This study is anchored on two theories: The Fraud Diamond Theory and Cybernetics Theory. These frameworks provide a comprehensive lens through which to examine the motivations behind financial malpractices

and the systemic control mechanisms required to mitigate them within a complex commercial environment.

### 4.1 The Fraud Diamond Theory

The Fraud Diamond Theory, introduced by Wolfe and Hermanson (2004), serves as a fundamental pillar for this research. This theory builds upon the traditional Fraud Triangle by adding a fourth dimension: capability. The four elements include incentive (pressure), opportunity, rationalisation, and capability. While the first three elements explain why an individual might consider committing fraud, the element of capability focuses on whether the individual possesses the necessary traits and abilities to actually execute the scheme. According to Odum and Odum (2024), forensic auditing is specifically designed to counter these sophisticated capabilities by employing investigative mindsets that go beyond surface-level financial entries.

The Fraud Diamond Theory is particularly relevant to the Onitsha Metropolis due to its status as a glocalised commercial hub. In this environment, the intersection of international trade and local informal systems creates a unique "opportunity" for fraud. Furthermore, the transition to digital commerce requires "capability" on the part of the fraudster to bypass internal controls. Forensic auditing, as a discipline, seeks to identify these capabilities and the "rationalisation" used by perpetrators in urban commercial centres (Okafor & Nwachukwu, 2022). By understanding the four sides of the diamond, forensic auditors in Onitsha can better predict and detect complex fraud schemes that traditional auditing might miss.

#### 4.1.2 Cybernetics Theory

Cybernetics Theory, originally developed by Norbert Wiener (1948), focuses on the study of control and communication in systems, whether they are mechanical, biological, or social. At its core, cybernetics is concerned with feedback loops: the process by which a system monitors its own performance, identifies deviations from the desired state, and takes corrective action to maintain equilibrium. In an organisational or economic context, forensic auditing acts as the critical feedback mechanism that identifies "noise" (fraud or errors) within the financial communication system. Maharani and Utomo (2026) suggest that technology-driven drivers of fraud prevention are essentially cybernetic tools that allow for real-time monitoring and systemic adjustment.

These two theories is justified in this study because Onitsha Metropolis can be viewed as a complex, self-regulating economic system with high-velocity data and transaction flows. Cybernetics Theory justifies the use of forensic auditing as an essential "control loop" within this system. As commerce in Onitsha becomes more glocalised, the "system" faces higher entropy or disorder in the form of sophisticated financial crimes. Forensic auditing, especially when augmented by artificial intelligence and digital technologies, provides the necessary feedback to restore financial order and ensure systemic sustainability (Ndubuisi-Okolo et al., 2025; Abdo-Salloum & Chehade, 2026). This theory shifts the perspective of forensic auditing from a mere investigative tool to a fundamental systemic requirement for the stability of a commercial hub.

The integration of these two theories provides a robust framework for the study. While the

Fraud Diamond Theory focuses on the micro-level (the traits and motivations of the individual fraudster), Cybernetics Theory addresses the macro-level (the systemic controls and feedback loops required to maintain financial integrity). Together, they justify the necessity of forensic auditing in the Onitsha Metropolis as both a deterrent to capable fraudsters and a vital mechanism for systemic survival in a glocalised economy.

#### 5.0 METHODOLOGY

This section delineates the systematic procedures utilised to investigate the impact of forensic auditing within the glocalised commercial environment of the Onitsha metropolis. It outlines the research design, the population of the study, sampling techniques, methods of data collection, and the statistical tools employed for data analysis.

##### 5.1 Research Design

This study adopted a descriptive survey research design. This design was deemed most appropriate because it facilitates the collection of comprehensive data regarding the perceptions, attitudes, and experiences of professionals concerning forensic auditing practices (Saunders et al., 2019). The justification for adopting the descriptive survey design lies in its capacity to provide a snapshot of the current state of forensic accounting within a specific geographical and economic context, such as the Onitsha metropolis. According to Creswell and Creswell (2018), a survey design is advantageous when the researcher intends to generalise from a sample to a population so that inferences can be made about some characteristic, attitude, or behaviour of that population. In the context of a glocalised hub, this design allows for the systematic quantification of qualitative perceptions regarding fraud management and forensic dimensions.

### 5.1.2 Population and Sampling Technique

The study focused on the commercial ecosystem of the Onitsha metropolis, a major trading hub in West Africa that exemplifies glocalisation through its integration of local market dynamics and global supply chains. The population comprised forensic accountants, internal auditors, and managers of prominent commercial enterprises operating within this hub.

A purposive sampling technique was employed to select 150 participants. This non-probability sampling method was chosen to ensure that the respondents possessed the requisite technical knowledge and professional experience to provide informed responses on forensic audit dimensions (Etikan et al., 2016). By targeting specific roles such as internal auditors and forensic specialists, the study ensures that the data gathered is rich in professional insight, which is essential for evaluating complex financial fraud management strategies.

### 5.1.3 Instrument for Data Collection

The primary data for this research were gathered through a structured questionnaire. The instrument was designed using a Likert-scale format, ranging from 'Strongly Agree' to 'Strongly Disagree'. This structured approach was selected to facilitate the standardisation of responses and to enable the application of quantitative statistical analysis. The questionnaire was divided into thematic sections: the first captured the demographic profiles of the respondents, while subsequent sections addressed specific forensic auditing dimensions and their perceived effectiveness in fraud management within the Onitsha commercial space.

### 5.1.4 Method of Data Analysis

The data collected were subjected to rigorous statistical testing using the Statistical Package for the Social Sciences (SPSS) version 27. Two primary statistical methods were utilised:

- 1. Pearson Correlation Analysis:** This was employed to determine the direction and strength of the relationship between forensic audit dimensions and fraud management. This test is vital for identifying how closely these variables co-move within a glocalised commercial framework.
- 2. Multiple Regression Analysis:** This technique was used to test the hypothesised relationships and to ascertain the extent to which forensic auditing dimensions (the independent variables) predict or influence fraud management (the dependent variable). Multiple regression is particularly effective in this study as it allows for the simultaneous assessment of multiple forensic factors on a single outcome variable (Hair et al., 2019).

The choice of these tools ensures that the findings are not only descriptive but also inferential, providing a robust basis for conclusions regarding the efficacy of forensic auditing in the Onitsha metropolis.

### Data Presentation and Analysis

This section presents the data obtained from the field survey conducted within the Onitsha metropolis. The analysis is structured to address the research objectives by evaluating the responses of 150 purposively selected professionals, including forensic accountants, internal auditors, and managers.

### Response Rate

A total of 150 copies of the questionnaire was administered to the target respondents. Out of

this number, 142 copies were correctly filled and returned, representing a 94.7 per cent response rate. This high response rate ensures the reliability of the findings in representing the commercial hub of Onitsha.

**5.1.5 Data Analysis and Hypothesis Testing**

The data were analysed using Pearson

Correlation and Multiple Regression Analysis via SPSS version 27. The variables tested include Forensic Investigative Skills (FIS), Digital Forensic Technologies (DFT), Forensic Litigation Support (FLS), and Internal Control Integration (ICI), with Fraud Management (FM) as the dependent variable.

**Table 1: Pearson Correlation Matrix**

Variables	FM	FIS	DFT	FLS	ICI
Fraud Management (FM)	1.000				
Forensic Investigative Skills (FIS)	0.742	1.000			
Digital Forensic Tech (DFT)	0.815	0.654	1.000		
Forensic Litigation Support (FLS)	0.688	0.592	0.512	1.000	
Internal Control Integration (ICI)	0.794	0.701	0.723	0.635	1.000

*Significant at 0.05 level (2-tailed).*

The correlation results in Table 1 indicate a strong positive relationship between all forensic auditing dimensions and fraud management in the Onitsha metropolis.

Digital Forensic Technology (0.815) shows the strongest correlation, suggesting that as digital tools are adopted, the efficacy of fraud management increases significantly.

**Table 2: Multiple Regression Analysis Summary**

Model	R	R Square	Adjusted R Square	Std. Error of Estimate
1	0.864	0.746	0.739	0.412

The R-square value of 0.746 suggests that approximately 74.6 per cent of the variance in fraud management within the glocalised commercial hub is explained by the

combination of forensic investigative skills, digital technologies, litigation support, and internal control integration.

**Table 3: Coefficients of Forensic Auditing Dimensions**

Model	Unstandardised Coefficient B	Std. Error	Beta	t	Sig.
(Constant)	0.521	0.142		3.669	0.001
Forensic Investigative Skills	0.384	0.065	0.312	5.907	0.000
Digital Forensic Tech	0.442	0.071	0.405	6.225	0.000
Forensic Litigation Support	0.295	0.058	0.244	5.086	0.000
Internal Control Integration	0.418	0.069	0.378	6.058	0.000

**5.1.6 Findings**

The empirical analysis, conducted using Multiple Regression and Pearson Correlation via SPSS version 27, yielded the following specific findings:

1. The regression model produced an R-square value of 0.746. This indicates that 74.6 per cent of the total variance in fraud management within the glocalised commercial hub of Onitsha is explained by the combination of forensic investigative skills, digital forensic technologies, litigation support, and internal control

integration.

2. The analysis revealed a significant positive impact of investigative skills on the detection of sophisticated fraud ( $\beta = 0.312, t = 5.907, p < 0.05$ ). Consequently, the null hypothesis (H01) was rejected.
3. This variable emerged as the most significant predictor of fraud prevention ( $\beta = 0.405, t = 6.225, p < 0.05$ ). The result indicates a strong positive relationship, leading to the rejection of the null hypothesis (H02).

4. The data confirmed a significant positive relationship between litigation support and the successful prosecution of financial crimes ( $\beta = 0.244$ ,  $t = 5.086$ ,  $p < 0.05$ ). Thus, the null hypothesis (H03) was rejected.
5. The integration of forensic auditing into internal control systems significantly improves business sustainability ( $\beta = 0.378$ ,  $t = 6.058$ ,  $p < 0.05$ ). Based on this, the null hypothesis (H04) was rejected.

### 5.1.7 Discussion of Findings

The findings of this study offer a robust empirical foundation for understanding the efficacy of forensic auditing in a globalised commercial environment.

#### The Impact of Investigative Skills

The significant impact of forensic investigative skills ( $\beta = 0.312$ ) confirms that the depth of investigative expertise is paramount for uncovering concealed financial malpractices. This result aligns with the findings of Odum and Odum (2024), who argued that forensic investigation provides the unique professional scepticism required to identify irregularities that statutory audits often overlook. In the Onitsha metropolis, where traditional trade practices and complex global supply chains intersect, these skills are essential for identifying the "capability" element of the Fraud Diamond Theory. Furthermore, this finding corroborates the work of Ijeoma (2015), who noted that forensic skills are vital for curbing creative accounting practices used to distort financial performance.

#### The Dominance of Digital Technology and AI

Digital Forensic Technologies emerged as the strongest predictor in the model ( $\beta = 0.405$ ). This underscores the critical role of technological adoption in managing fraud within high-velocity commercial hubs. This finding supports the propositions of Abdo-Salloum and Chehade (2026), who demonstrated that artificial intelligence transforms auditing by facilitating the real-time processing of massive datasets. For the Onitsha metropolis, this result highlights the need to bridge the "technological lag" identified by Okafor and Nwachukwu (2022). As transactions increasingly migrate to digital platforms, the use of AI-driven tools becomes a fundamental requirement for systemic survival.

#### Forensic Litigation Support and Fund Recovery

The significance of litigation support ( $\beta = 0.244$ ) highlights the role of the forensic auditor as an expert witness in the recovery of misappropriated funds. This finding is consistent with the research of Akanbi and Oputeh (2026), who identified litigation support as a primary driver of accountability in the Nigerian public and private sectors. In a globalised hub where commercial disputes are frequent, the ability to provide admissible evidence ensures that the "control loop" of the Cybernetics Theory is completed, allowing the system to take corrective legal action against financial deviations.

#### Internal Control Integration and Sustainability

The significant relationship between forensic-integrated internal controls and business sustainability ( $\beta = 0.378$ ) validates the necessity of proactive forensic vigilance. This

aligns with the views of Johnson et al. (2024), who observed that traditional internal controls are often bypassed by individuals with high technical capability. By embedding forensic techniques into these controls, businesses in Onitsha can achieve the operational efficiency and long-term sustainability described by Ndubuisi-Okolo et al. (2025). This integration serves as a continuous feedback mechanism that restores financial order and protects the assets of enterprises operating in competitive markets.

## 6.0 CONCLUSION

This study concludes that forensic auditing is an indispensable mechanism for maintaining financial integrity within the glocalised commercial hub of the Onitsha metropolis. The intersection of global trade pressures and local market complexities creates a fertile ground for sophisticated financial crimes that traditional auditing cannot adequately address. By leveraging forensic investigative skills, digital technologies, litigation support, and integrated internal controls, commercial enterprises in Onitsha can mitigate the risks of fraud. The high R-square value suggests that a proactive forensic culture is central to the economic survival of this hub. Ultimately, forensic auditing serves as both a deterrent to capable fraudsters and a systemic feedback loop that restores financial order in a rapidly evolving economy.

## 7.0 RECOMMENDATIONS

Based on the findings, the following recommendations are made:

1. Professional bodies and commercial enterprises in Onitsha should invest in periodic forensic investigative training for internal auditors to enhance their capability to detect creative accounting

and procurement fraud.

2. To bridge the technological lag, businesses in the Onitsha hub should transit from manual auditing to AI-powered digital forensic tools that allow for real-time monitoring of transactions.
3. There should be a closer synergy between forensic auditors and legal practitioners to ensure that investigative reports are prepared in a manner that facilitates successful prosecution and fund recovery.
4. Management of commercial enterprises should restructure their internal control systems to include forensic "red-flag" identifiers, ensuring that controls are not just compliance-based but investigative in nature.
5. Government agencies overseeing commerce in the South-East should provide infrastructural support and policy frameworks that encourage the use of blockchain and machine learning in financial surveillance.

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