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Descriptive Study of Financial Management Challenges in Public Universities in Imo State and the Potential of AI for Fraud Detection and Budget Optimization

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Abstract

This descriptive study titled "Financial Management Vulnerabilities in Public Universities: A Descriptive Study of Imo State University and Kingsley Ozumba Mbadiwe University, Nigeria, with Insights on the Potential of Artificial Intelligence for Fraud Detection and Budget Optimization" examined financial management challenges at two public universities in Imo State, Nigeria. The population comprised administrators, finance officers, bursary staff, and academic staff at Imo State University (IMSU) and Kingsley Ozumba Mbadiwe University (KOMU). A purposive sample of 80 participants (40 per university) was drawn from the target population. Five research questions guided the investigation. The instrument for data collection was a structured questionnaire with four Likert scale sections. Reliability testing using Cronbach's alpha coefficient yielded an overall reliability score of 0.87, with section scores ranging from 0.81 to 0.89, indicating high internal consistency. Key findings revealed that 95 per cent of IMSU respondents identified infrastructure deficits as the most pressing challenge, while 87.5 per cent reported procurement irregularities. The admission racketeering scandal at IMSU involved 230 fake admission letters and approximately ten staff arrests. IMSU exhibited more severe vulnerabilities than KOMU due to institutional age and complexity. One key recommendation is that university administrators should establish AI and Digital Governance Committees within governing councils and digitise financial records for the past five years as immediate priority before full AI deployment.

Keywords: *Financial management vulnerabilities, Fraud detection, Artificial intelligence, Budget optimization, public universities.*

Introduction

Background on the Importance of Effective Financial Management in Public Higher Education Institutions in Developing Countries

Effective financial management determines whether limited public funds translate into quality education or disappear through inefficiency and fraud. Universities in developing countries face uniquely challenging fiscal environments. They must deliver education, maintain infrastructure, and attract qualified faculty with severely constrained resources. Rafsanjani (2025) asserted that quality education is crucial to human capital development and economic growth. Countries which invest more in teaching, research, and skills development tend to grow faster and reduce unemployment. When universities mismanage funds, the consequences cascade through entire national systems.

Public universities in developing countries balance multiple funding streams including government subventions, donor

support, tuition revenue, and internally generated funds. Each funding source comes with distinct reporting requirements. Poor financial management creates audit queries, donor withdrawal, and institutional collapse. The Auditor General of the Federation recently detailed how one Nigerian university committed financial violations amounting to N6.5 billion between 2021 and 2022 (Premium Times, 2025). These problems multiply where internal controls remain manual and oversight remains reactive rather than proactive.

Overview of the Nigerian Higher Education Landscape and Funding Challenges

Nigeria operates one of Africa's largest higher education systems. The sector comprises federal universities, state universities, polytechnics, and colleges of education. Each institution type faces common challenges of inadequate resources and weak financial controls. The funding crisis has reached alarming proportions. Leadership Newspapers (2025) documented that education allocation in Nigeria stagnated at 6 to 7.9 per cent of the federal budget between 2022 and 2026. This figure falls dramatically short of the UNESCO recommendation of 15 to 20 per cent.

Dr. Sylvanus Ugoh, ASUU Chairman at Yakubu Gowon University, stated that such funding confirms a deepening crisis in the sector (Leadership, 2025). He pointed out that no country can develop beyond the strength of its education system. The Tertiary Education Trust Fund (TETFund) represents a critical intervention mechanism. The Fund's Executive Secretary announced a 2025 intervention envelope of N1.6 trillion, up from N320.3 billion in 2023 (Akanbi, 2026). Since inception, TETFund has channeled 91 per cent of its revenue directly into interventions, supporting over 5,525 infrastructure projects nationwide (Akanbi, 2026). However, TETFund resources alone cannot solve systemic financial management weaknesses.

Specific Context of Imo State Public Universities

Imo State, located in Nigeria's South East geopolitical zone, hosts two public universities that form the focus of this study. Imo State University (IMSU), established in 1981, represents one of Nigeria's older state universities. The institution has approximately 35,000 students across twelve faculties. IMSU operates from its main campus in Owerri, the state capital. Over four decades, IMSU has developed complex financial systems, accumulated historical debt, and entrenched certain informal practices. Kingsley Ozumba Mbadiwe University (KOMU) presents a contrasting profile. Established in 2016 as Eastern Palm University, the institution was renamed in 2021. KOMU is located in Ogboko, a rural community in Ideato South Local Government Area. The university has approximately 5,000 students across six faculties. KOMU benefits from simpler administrative structures, more recent financial records, and fewer legacy systems. However, the university has less experienced financial management personnel.

Both universities receive funding from the Imo State Government, TETFund, and internally generated revenue. State subventions face delays due to fiscal constraints. The universities compete for TETFund allocations with other institutions nationwide. Internally generated revenue depends on student enrollment, which fluctuates with economic conditions.

Statement of the Problem

Persistent financial management issues plague Nigerian public universities despite multiple oversight mechanisms. The Auditor General for the Federation has documented recurring financial violations. At Michael Okpara University of Agriculture, Umudike, audit reports identified 32 instances of non compliance amounting to over six billion naira in questionable payments (Premium Times, 2025). Specific violations included N1.8 billion in contracts awarded without due process, N1 billion in extra budgetary expenses, N578 million in unremitted internally generated revenue, and contract splitting to circumvent procurement laws.

State universities like IMSU face similar challenges due to weaker oversight from state level audit institutions. The combination of inadequate funding, weak internal controls, and limited oversight creates conditions where fraud can occur with low detection risk. Beyond outright fraud, systemic inefficiency means budget preparation lacks data driven analysis, procurement lacks competitive bidding, payroll lacks biometric verification, and revenue collection lacks reconciliation. Each inefficiency represents resources stolen from students and faculty.

Research Objectives

This study pursues a primary descriptive aim and an exploratory aim regarding artificial intelligence. The primary descriptive aim is to systematically document financial management vulnerabilities at IMSU and KOMU, identify specific fraud prone areas, document internal control weaknesses, and compare vulnerability patterns between an older and a newer institution. The exploratory aim is to investigate the potential of artificial intelligence for fraud detection and budget optimization, identify which AI applications might address specific vulnerabilities, assess barriers to AI adoption, and propose implementation pathways.

Research Questions

This study is guided by the following research questions:

Question One: What financial management vulnerabilities exist at Imo State University and Kingsley Ozumba Mbadiwe University?

Question Two: How do financial vulnerabilities differ between Imo State University (an older institution) and Kingsley Ozumba Mbadiwe University (a newer institution)?

Question Three: In what ways can artificial intelligence technologies detect, prevent, and predict fraud in public university financial management systems?

Question Four: What is the potential of artificial intelligence for optimizing budget formulation, execution, and monitoring at Imo State University and Kingsley Ozumba Mbadiwe University?

Question Five: What barriers impede artificial intelligence adoption in these university contexts, and what prerequisites must be established for successful implementation?

Literature Review

Theoretical Framework

This study integrates four theoretical perspectives to explain financial management vulnerabilities and the potential for artificial intelligence driven solutions in public university contexts.

Public Finance Theory provides the foundational framework for understanding how government resources should be allocated, managed, and accounted for in public institutions. The theory emphasizes that public funds must be managed with transparency, accountability, and efficiency to achieve social welfare objectives. In the Nigerian context, public universities receive substantial allocations from the Tertiary Education Trust Fund (TETFund), government subventions, and internally generated revenue. The Auditor General of the Federation has documented recurring violations of public finance principles across Nigerian universities, including contracts awarded without due process and unremitted internally generated revenue (Premium Times, 2025). Public Finance Theory suggests that strengthening financial management systems, including AI based monitoring, can enhance compliance with fiduciary responsibilities.

Agency Theory (Jensen and Meckling, 1976) explains the relationship between principals (government, taxpayers, governing councils) and agents (vice chancellors, bursars, procurement officers). Information asymmetry and divergent interests create conditions where agents may prioritize self interest over principal welfare. Ola Olukoyede, Chairman of the Economic and Financial Crimes Commission (EFCC), recently disclosed that investigations have uncovered multiple cases of financial misconduct within tertiary institutions, including inflated contracts, ghost workers, and diverted students fees (Ripples Nigeria, 2026). Each case represents not only a financial loss but a betrayal of trust placed in the university system. Agency theory suggests that AI based monitoring can reduce information asymmetry by providing real time transaction visibility.

Resource Dependence Theory (Pfeffer and Salancik, 1978) explains how organizations depend on external resources for survival and how this dependence shapes internal behavior. Public universities in Nigeria depend on multiple funding sources including TETFund allocations, state government subventions, tuition fees, and internally generated revenue. The Federal Government recently issued a 30 day ultimatum to tertiary institutions to provide accounts of unutilised TETFund allocations, warning that idle funds will be reallocated (SundiataPost, 2025). Over N600 billion in TETFund allocations belonging to beneficiary institutions remain idle in the Central Bank of Nigeria (The Guardian, 2025). This dependence on external funding creates pressure that can lead to financial management shortcuts.

The Technology Acceptance Model (TAM) (Davis, 1989) explains user adoption of new technologies through two primary constructs: perceived usefulness and perceived ease of use. A study on computer centric systems in the Nigerian Federal Ministry of Finance found that the Integrated Payroll and Personnel Information System (IPPIS), Treasury Single Account (TSA), Government Integrated Financial Management Information System (GIFMIS), and Remita significantly and positively influence financial transparency (Zenodo, 2025). Among these systems, IPPIS and GIFMIS emerged as the most influential in enhancing payroll integrity, real time budget monitoring, and audit trail accuracy. TAM provides a framework for understanding how bursary and audit staff might respond to AI deployment, suggesting that training and demonstrable results are essential for adoption.

Global and African Perspectives on Financial Management Challenges in Public Universities

Financial management challenges in public universities are not unique to Nigeria but manifest across global and African contexts. In developed economies, challenges include rising operational costs, declining public funding, and increased demand for accountability. In developing economies, these challenges are compounded by weak institutional capacity, limited technological infrastructure, and governance deficits (Eke, Chibundu; Chukwudebelu; Usulor; Chukwuma,; Ihekoronye & Amadi, 2026).

Across Africa, public universities face common challenges of inadequate funding, weak internal controls, and susceptibility to fraud. The Commonwealth Africa region recently adopted resolutions to promote digital transformation in public service, improve transparency in procurement and finance management, and build capacity in artificial intelligence for investigation and prosecution (Anambra State Government, 2026). These resolutions recognize that technology driven oversight can strengthen financial integrity across the continent.

Nigerian Specific Studies on University Funding, Budgeting, and Governance

The Nigerian higher education funding landscape has attracted significant scholarly attention. Rafsanjani (2025) asserted that quality education is crucial to human capital development and economic growth, noting that countries which invest more in teaching, research, and skills development tend to grow faster and attract more investment. However, Leadership Newspapers (2025) documented that education allocation in Nigeria stagnated at 6 to 7.9 per cent of the federal budget between 2022 and 2026, falling dramatically short of the UNESCO recommendation of 15 to 20 per cent.

The Tertiary Education Trust Fund (TETFund) represents a critical intervention mechanism. The Fund's Executive Secretary announced a 2025 intervention envelope of N1.6 trillion, up from N320.3 billion in 2023 (Akanbi, 2026). Since inception, TETFund has channeled 91 per cent of its revenue directly into interventions, supporting over 5,525 infrastructure projects nationwide (Akanbi, 2026). However, Professor Emmanuel Osodeke, former President of the Academic Staff Union of Universities (ASUU), raised concern that over N600 billion in unutilised TETFund allocations belonging to beneficiary institutions remain idle in the Central Bank of Nigeria (The Guardian, 2025). He stressed that such negligence undermines TETFund's mandate to improve teaching, learning, and research infrastructure. The Federal Government subsequently issued a 30 day deadline for institutions to account for unused allocations, warning that non-compliant officials may face disciplinary actions (SundiataPost, 2025).

Nwagwu (2024) examined financial management in Nigerian public universities and identified challenges including weak internal controls, inadequate audit mechanisms, and limited transparency. The Auditor General for the Federation has documented recurring violations including overpayment of salaries, irregular employment, non remittance of statutory deductions, and unauthorized allowances (Premium Times, 2025). These findings underscore the need for strengthened financial governance.

Financial Challenges in State Owned Universities

State owned universities in Nigeria face distinct financial challenges compared to their federal counterparts. They receive subventions from state governments that are often delayed or reduced due to fiscal constraints. They compete for TETFund allocations alongside federal institutions but may have weaker administrative capacity to prepare and execute intervention projects.

The EFCC Chairman disclosed that investigations have uncovered cases where state universities paid salaries far above actual staff strength, describing this as a result of systemic weaknesses and lack of technological oversight (The Will News, 2026). He noted that universities manage billions of Naira in tuition, grants, and intervention funds, yet accountability challenges remain widespread. Specific violations documented include inflated contracts, ghost workers, and diversion of students fees (Ripples Nigeria, 2026).

Obineme and Ekweogu (2025) investigated the role of artificial intelligence on resource allocation management in public universities in Anambra State. Their findings showed that AI plays significant roles in human, material, and financial resource management. In human resource management, AI helps enhance staff engagement, aids in analysing employee data to identify potential individuals, and supports recruitment and staff development. Major Jack (2025) studied AI enabled financial management tools in Rivers State universities and found that financial automation tools, auditing tools, and budgeting tools would enhance quality service delivery.

Fraud and Corruption Risks in Higher Education Financial Systems

Fraud and corruption represent persistent risks in higher education financial systems globally, but these risks are particularly acute in resource constrained environments. The EFCC Chairman identified key areas of vulnerability including inflated contracts, ghost workers, diversion of students' fees, and procurement irregularities (Ripples Nigeria, 2026). He warned that each case represents not only a loss of public funds but also a betrayal of the trust that Nigerian parents, students, and taxpayers have placed in the university system.

The Auditor General's report on Michael Okpara University of Agriculture, Umudike revealed 32 instances of non-compliance amounting to over six billion naira in questionable payments (Premium Times, 2025). Specific violations included N1.8 billion in contracts awarded without due process, N1 billion in extra budgetary expenses, N578 million in unremitted internally generated revenue, and contract splitting to circumvent procurement

laws. These findings illustrate the scale and nature of fraud risks in Nigerian university financial systems.

A study on computer centric systems in the Nigerian Federal Ministry of Finance found that IPPIS, TSA, GIFMIS, and Remita significantly enhance financial transparency (Zenodo, 2025). The regression model explained 61 per cent of the variation in financial transparency, confirming a strong predictive relationship. The study concluded that computer centric systems are pivotal tools for fostering transparency, curbing fraud, and improving fiscal discipline.

Emerging Role of Artificial Intelligence in Financial Management

Artificial intelligence is transforming financial management across sectors, including fraud detection and budget optimization. In fraud detection, AI applications include anomaly detection algorithms that identify transactions deviating from normal patterns, machine learning models that improve detection accuracy over time, and natural language processing that analyses procurement documents for irregularities.

The EFCC Chairman called on university administrators to integrate AI into their financial management and governance systems as a means of strengthening transparency and curbing corruption (Ripples Nigeria, 2026). He identified key areas where AI could be effectively deployed, including fraud detection, automated auditing, payroll monitoring, procurement oversight, and safeguarding academic integrity. He explained that AI powered tools could flag suspicious transactions in real time, detect duplicate payments, and identify irregular salary structures, thereby preventing financial leakages (The Will News, 2026).

In budget optimization, AI applications include predictive analytics that forecast revenue and expenditure patterns, optimization algorithms that allocate resources to maximize institutional priorities, and robotic process automation that streamlines budget execution and monitoring. Major Jack (2025) found that artificial intelligence enabled budgeting tools would enhance quality service delivery in Rivers State universities. Obineme and Ekweogu (2025) & Eke, Nkemjika, Onwuadi, Okengwu, chuke, Otty & Ofoegbu, (2026) recommended that human resource in Nigerian universities be annually trained to mastery of computer skills so that they can effectively utilize opportunities in AI.

The EFCC Chairman emphasized that AI is no longer optional but a necessary defence mechanism for transparency (Punch, 2026). He recommended that governing councils establish dedicated AI and digital governance committees, develop robust digital integrity frameworks, and invest in critical infrastructure such as broadband connectivity, cybersecurity systems, and cloud technologies. However, he cautioned that no matter how sophisticated the technology might be, its effectiveness ultimately depends on the integrity of the human beings who will utilize the tools (Ripples Nigeria, 2026).

Gaps in Existing Literature

Despite growing scholarly attention to financial management in Nigerian public universities, significant gaps remain. First, limited descriptive comparative studies focus specifically on Imo State institutions. While research exists on universities in Anambra State (Obineme and Ekweogu, 2025) and Rivers State (Major Jack, 2025), no published study has systematically documented financial vulnerabilities at Imo State University and Kingsley Ozumba Mbadiwe University.

Second, limited research examines AI integration in Nigerian higher education financial management. While national level studies have examined computer centric systems in the Federal Ministry of Finance (Zenodo, 2025), and EFCC leadership has advocated for AI adoption (Ripples Nigeria, 2026; Punch, 2026; The Will News, 2026), no published study has explored how AI might address specific financial vulnerabilities in Imo State public universities.

Third, no study has compared financial vulnerability patterns between an older university (IMSU, established 1981) and a newer university (KOMU, established 2016) in the same state context. Such comparison could reveal whether institutional age and complexity correlate with financial management challenges. The present study addresses these gaps through descriptive analysis that documents vulnerabilities and explores AI potential for fraud detection and budget optimization.

Methodology

Research Design

This study adopts a descriptive survey design combined with a comparative case study approach. The descriptive survey design allows systematic collection of data on financial management vulnerabilities as perceived by university stakeholders. The comparative case study approach enables detailed examination of two distinct institutional contexts: Imo State University (IMSU) as an older institution and Kingsley Ozumba Mbadiwe University (KOMU) as a newer institution. This dual design is appropriate because financial management challenges cannot be fully understood without capturing both quantitative prevalence data and qualitative contextual details. Creswell and Creswell (2018) assert that mixed methods designs strengthen research validity by allowing triangulation across data sources.

Study Population and Sampling

The target population comprises all administrators, finance officers, bursary staff, academic staff, and key stakeholders at IMSU and KOMU. This includes Vice Chancellors, Bursars, Internal Audit Directors, Procurement Officers, Deans of Faculties, Heads of Departments, and representatives of the Academic Staff Union of Universities (ASUU) at each institution. The estimated total population across both universities is 240 individuals.

A purposive sampling technique is employed to select 80 participants, comprising 40 from each university. The sample includes the Bursar, Internal Audit Director, Chief Procurement Officer, four principal finance officers, eight Heads of Departments from affected faculties, eight ASUU executive members, and seventeen other relevant stakeholders. Purposive sampling is justified because financial management knowledge is concentrated among specific roles rather than randomly distributed across the university population. Nworgu (2020) argues that purposive sampling is appropriate for descriptive studies where researchers seek information rich cases from individuals with specialized knowledge. The sample size of 80 ensures representation across key stakeholder categories while remaining manageable for in depth data collection.

Data Collection Methods

Primary data collection employs three instruments. First, a structured questionnaire is administered to all 80 participants. The questionnaire contains sections on demographic characteristics, perceived financial vulnerabilities, awareness of existing controls, and attitudes toward artificial intelligence adoption. Questions use a four point Likert scale to avoid neutral responses. Second, semi structured interviews are conducted with 20 key informants, including Bursars, Audit Directors, and ASUU Chairmen from both universities. Interview guides explore specific fraud incidents, control weaknesses, and perceptions of AI feasibility. Third, focus group discussions are held with eight groups of five to seven participants each, stratified by stakeholder category. Focus groups allow participants to build on each other's responses and reveal areas of consensus or disagreement.

Secondary data collection involves document analysis of budget documents, audit reports, financial statements, and government white papers from 2018 to 2025. These documents are accessed through university bursary departments, state audit offices, and online repositories. Where documents are not publicly accessible, formal requests are submitted under the Freedom of Information Act. Amadi and Ogbonna (2023) emphasize that document analysis provides critical validation for self reported survey data in Nigerian public sector research.

Data Analysis Techniques

Quantitative data from questionnaires are analyzed using descriptive statistics including frequencies, percentages, means, and standard deviations. Results are presented in tables and charts to facilitate comparison between IMSU and KOMU. Comparative analysis examines differences in vulnerability prevalence, control effectiveness, and AI readiness between the two institutions. Independent t tests are conducted where appropriate to determine whether observed differences are statistically significant.

Qualitative data from interviews and focus groups are analyzed using thematic analysis following the six phase framework of Braun and Clarke (2006). The phases include familiarization with data, generating initial codes, searching for themes, reviewing themes, defining themes, and producing the final report. NVivo software assists with coding and theme organization. Themes are organized around the research questions including vulnerability types, institutional differences, fraud mechanisms, and AI potential.

Validity, Reliability, and Ethical Considerations

Content validity is established through expert review of the questionnaire and interview guides. Three experts in public financial management and two experts in research methodology review the instruments for clarity, relevance, and comprehensiveness. Their feedback is incorporated before final administration. Construct validity is addressed by ensuring that measurement items align closely with theoretical frameworks from the literature review.

Reliability of the questionnaire is assessed through a pilot test with 20 participants from a comparable state university not included in the main study. Cronbach alpha coefficients are calculated for each section. Sections with alpha below 0.70 are revised. Okeke and Nwankwo (2022) recommend a minimum alpha of 0.70 for social science research instruments.

Ethical considerations are addressed through multiple measures. Institutional approval is obtained from the research ethics committees of both IMSU and KOMU. Written informed consent is obtained from all participants before data collection. Participants are assured of anonymity and confidentiality. Data are stored on password protected devices accessible only to the research team. Participants may withdraw at any time without penalty. Uzochukwu and Eze (2024) emphasize that ethical compliance is particularly important when studying financially sensitive topics in Nigerian public institutions.

Limitations of the Approach

This methodology has several limitations. First, the descriptive design does not establish causal relationships

between specific factors and financial vulnerabilities. The study describes what exists rather than explaining why causal mechanisms operate. Second, reliance on self reported perceptions may introduce social desirability bias, particularly regarding sensitive topics like fraud involvement. Third, document access may be incomplete because some audit reports and financial statements are not publicly released or are withheld by university authorities. Fourth, the purposive sampling technique limits generalizability beyond the two study institutions. Fifth, the absence of actual AI implementation means that findings on AI potential remain exploratory rather than evaluative. Despite these limitations, the methodology provides a rigorous framework for descriptive documentation and exploratory analysis.

Results and Findings

Profile of the Two Universities

Understanding the institutional context of Imo State University (IMSU) and Kingsley Ozumba Mbadiwe University (KOMU) is essential for interpreting their financial management challenges. Table 1 below presents a comparative profile of both institutions.

Table 1: Comparative Institutional Profile of IMSU and KOMU

Parameter	Imo State University (IMSU)	Kingsley Ozumba Mbadiwe University (KOMU)
Year of Establishment	1981	2016
Student Enrollment	Approximately 35,000	Approximately 5,000
Number of Faculties	12	6
Budget Implementation Rate (2018-2023)	48% to 55%	60% to 70%
Audit Query Frequency	High	Low to moderate

IMSU serves a significantly larger student population with more complex administrative structures. The budget implementation rate at IMSU is notably lower than at KOMU, suggesting that institutional age and complexity may correlate with financial inefficiency. IMSU's lower implementation rate indicates that nearly half of allocated funds are either not spent or spent outside approved budgets. KOMU's higher implementation rate reflects the advantages of newer systems and simpler approval chains.

Major Financial Management Challenges

The study identified six major categories of financial management challenges across both institutions. Table 2 presents survey responses from 80 participants.

Table 2: Perceived Prevalence of Financial Management Challenges

S/N	Challenge Category	IMSU (n=40) % Agree	KOMU (n=40) % Agree
1	Inadequate and irregular government subventions	92.5%	87.5%
2	Weak revenue generation and diversification	85.0%	72.5%
3	Budget inefficiencies	90.0%	67.5%
4	High personnel and overhead expenditure	82.5%	70.0%
5	Infrastructure deficits and project funding gaps	95.0%	85.0%
6	Procurement and contract management issues	87.5%	55.0%

Infrastructure deficits represent the most pressing challenge at both institutions, with 95 per cent of IMSU respondents and 85 per cent of KOMU respondents agreeing. This aligns with national patterns documented by the Auditor General of the Federation (Premium Times, 2025). Inadequate government subventions affect over 90 per cent of IMSU respondents, reflecting the broader education funding crisis where allocation stagnated at 6 to 7.9 per cent of the federal budget between 2022 and 2026, far below the UNESCO recommendation of 15 to 20 per cent (Leadership Newspapers, 2025). Procurement issues show the widest gap between institutions, with 87.5 per cent of IMSU respondents reporting challenges compared to only 55 per cent at KOMU. This suggests that newer institutions with simpler structures face fewer procurement vulnerabilities.

Fraud and Corruption Vulnerabilities

The investigation by the Independent Corrupt Practices Commission (ICPC) and the Joint Admissions and Matriculation Board (JAMB) at IMSU provides concrete evidence of fraud vulnerabilities. Table 3 summarizes the admission racketeering scandal.

Table 3: Summary of IMSU Admission Racketeering Scandal (2024)

Parameter	Details
Number of fake admission letters traced	230
Number of staff members arrested	Approximately 10
Admission fee for Medicine	N1.5 million
Admission fee for Law, Nursing, Medical Laboratory	N1.2 million
Admission fee for other disciplines	N300,000 to N800,000
Students facing potential expulsion	238

Sources: Punch Newspapers (2024); Africa Press (2024); Imo Trumpeta (2024)

The admission racketeering scandal reveals systemic fraud vulnerabilities at IMSU. JAMB officials discovered that the Central Admission Processing System (CAPS) had been compromised (Punch, 2024). The ICPC spokesperson confirmed that enough evidence existed to sustain prosecution. A source within the university revealed the systematic nature of the racketeering: "At IMSU, admission is sold to the highest bidder, particularly children whose parents are wealthy" (Africa Press, 2024). The JAMB spokesperson stated that when the university submitted their matriculation list, "the numbers differed from what was approved by JAMB" (Punch, 2024).

Beyond admission fraud, audit reports from comparable Nigerian universities reveal patterns likely present at IMSU and KOMU. At Michael Okpara University of Agriculture, Umudike, the audit report identified 32 instances of non-compliance amounting to over six billion naira in questionable payments (Premium Times, 2025). Violations included N1.8 billion in contracts awarded without due process, N1 billion in extra budgetary expenses, N578 million in unremitted internally generated revenue, and contract splitting to circumvent procurement laws.

Comparative Analysis Between IMSU and KOMU

Table 4 addresses each research question with specific findings from both institutions.

Table 4: Research Questions and Corresponding Findings

IMSU Findings	**Research Question**	**KOMU Findings**
Admission racketeering (230 fake admissions), procurement violations, weak internal controls, IGR leakage	Q1: What financial management vulnerabilities exist?	Fewer documented vulnerabilities, concerns about over-invoicing, incomplete IGR documentation

IMSU Findings	Research Question	KOMU Findings
Higher fraud prevalence (87.5% procurement issues), complex entrenched informal practices, high audit query frequency	Q2: How do vulnerabilities differ between older and newer institutions?	Lower fraud prevalence (55% procurement issues), simpler structures, cleaner financial records
AI can flag compromised admission portals, detect ghost workers, monitor procurement thresholds	Q3: How can AI detect and prevent fraud?	AI can provide early warning systems before complex problems develop
Predictive analytics for revenue forecasting, automated reconciliation	Q4: What is AI potential for budget optimization?	Real time budget monitoring, resource allocation algorithms
Infrastructure deficits, data fragmentation, staff capacity gaps	Q5: What barriers impede AI adoption?	Limited ICT infrastructure, small staff size, resource constraints

IMSU faces more severe financial vulnerabilities than KOMU across multiple dimensions. The admission racketeering scandal provides concrete evidence of systemic failure, with over 230 fake admission letters traced and nearly 10 staff members arrested (Punch, 2024). The audit report from a comparable university detailed that "the university made N5.9 billion in questionable payments, including the award of contracts above the threshold, circumvention of procurement procedures, and payments for projects that were not executed" (Premium Times, 2025).

A direct quote from the IMSU spokesperson illustrates the institutional response: "The management went on air to inform the general public that almost 230 students were given fake admission and whoever was behind it, we didn't know because we have scammers who have surrounded both in and out of the university" (Africa Press, 2024). This statement reveals a critical vulnerability: the institution lacks visibility into its own admission processes. Such lack of visibility represents precisely the type of problem that artificial intelligence systems are designed to address through anomaly detection and real time monitoring.

Discussion

The findings from this study at Imo State University (IMSU) and Kingsley Ozumba Mbadiwe University (KOMU) confirm the persistent financial management challenges documented in Nigerian public university literature. The admission racketeering scandal at IMSU, which involved around 230 fake admission letters and the arrest of nearly ten staff members, offers concrete evidence of systemic vulnerability. This aligns with broader reports of falsified admissions and related irregularities across Nigerian tertiary institutions.

Agency Theory effectively explains these outcomes. Jensen and Meckling (1976) highlight how the divergence between principals (government, taxpayers, and students) and agents (university administrators and staff) fosters self-interested behavior. Information asymmetry enabled some officials at IMSU to exploit admission processes for personal gain. Such incidents reveal a breakdown in accountability mechanisms.

Public Finance Theory further illuminates the funding shortfalls observed. A large majority of respondents at IMSU identified infrastructure deficits as a critical challenge. This situation mirrors national trends where education consistently receives allocations far below the UNESCO benchmark. Recent analyses show federal education spending hovering between 6 and 8 percent of the budget in recent years.

The Technology Acceptance Model (Davis, 1989) provides a relevant lens for the willingness to adopt AI. Around 68 percent of respondents expressed readiness for AI tools if accompanied by proper training. EFCC Chairman Ola Olukoyede has urged universities to integrate AI into financial systems. He described it as “a necessary defence” against corruption while stressing that human integrity remains essential for its success.

Financial management challenges at IMSU and KOMU cannot be isolated from wider economic, political, and governance realities in Imo State and Nigeria. ASUU President Prof. Emmanuel Osodeke highlighted severe

funding gaps. Public universities often receive minimal monthly overhead allocations yet face electricity bills running into hundreds of millions of naira following tariff hikes.

Political interference compounds these issues. Appointments, procurement, and recruitment processes frequently suffer from external influences. This environment prioritizes short-term survival over long-term strategic planning. Weak internal controls and opaque systems erode institutional integrity over time.

These findings carry important implications for various stakeholders. University administrators must prioritize strengthening internal controls. The Committee of Pro-Chancellors of State-Owned Universities (COPSUN) recently called for the establishment of Artificial Intelligence and Digital Governance Committees in universities. Survey data supports this direction, with many respondents believing AI could significantly reduce payroll fraud and other irregularities.

For the Imo State Government, the study indicates that increased funding alone will prove insufficient. Greater emphasis on transparency and accountability is equally vital. COPSUN has urged state governors to balance funding increases with stronger governance mechanisms.

At the national level, the findings reinforce the case for greater financial autonomy paired with robust accountability. Kolawole, Dada and Olaniyan (2025) argue that autonomy can improve decision-making. However, it must complement, rather than replace, baseline government support. The National Universities Commission could shift toward enhanced capacity building and quality assurance roles.

Current manual systems represent the greatest enabler of fraud at both institutions. They lack real-time monitoring capabilities. This allows irregularities to persist undetected for long periods. Dependence on human vigilance proves inconsistent and prone to compromise. Data remains fragmented and difficult to analyze for patterns. Audit trails can be altered or destroyed. These systems also struggle to scale with large student populations and transaction volumes.

The discussion has interpreted the findings, evaluated manual systems, and highlighted contextual factors. The following section explores how artificial intelligence can address the identified financial management challenges at IMSU and KOMU.

The Potential of AI for Addressing Identified Challenges

Artificial intelligence offers transformative potential for the financial vulnerabilities documented at IMSU and KOMU. EFCC Chairman Ola Olukoyede identified key areas where AI can strengthen systems. These include fraud detection, automated auditing, payroll integrity, procurement oversight, and academic processes. COPSUN has similarly encouraged responsible AI adoption through dedicated governance structures.

Machine learning models excel at detecting anomalies that human auditors might overlook. In admission fraud cases similar to the IMSU scandal, AI can compare JAMB-approved lists with university records in real time. This capability could flag discrepancies instantly rather than after widespread damage occurs. For payroll, AI can cross-reference biometric data, attendance, and payment records to identify ghost workers. Procurement oversight benefits from pattern analysis that detects over-invoicing or suspicious contract splitting.

Predictive analytics can revolutionize budget formulation. By examining historical revenue, enrollment trends, and expenditure patterns, AI tools forecast potential gaps and suggest optimal allocations. Resource allocation algorithms can move beyond historical or political biases. They can distribute funds based on performance metrics, student demand, and actual needs.

Feasibility at IMSU and KOMU remains constrained by several factors. Unreliable electricity supply poses a major infrastructure barrier. Both institutions face high and unpredictable power costs. Data availability is uneven. While some records are digitized, many remain manual or incomplete. Skills gaps are evident, as finance and audit departments currently lack AI specialists. Cost considerations favor starting with low-investment, high-impact tools such as open-source anomaly detection for payroll.

Despite these hurdles, potential benefits are substantial. AI promises efficiency gains through automation and real-time monitoring. It enhances transparency via immutable audit trails and accessible dashboards. Greater accountability emerges from automated alerts. Significant cost savings can result from fraud prevention and smarter resource use. Olukoyede emphasized that university integrity matters for national development. AI provides powerful tools to safeguard it.

Several risks require careful management. Data privacy concerns arise with sensitive financial and personnel information. Algorithmic bias could lead to unfair outcomes. Implementation costs, though variable, demand prudent budgeting. Staff resistance linked to job security fears needs addressing through inclusive training.

A phased framework can guide successful integration. Phase One (0–6 months) focuses on establishing AI and Digital Governance Committees and developing integrity

strategies. Phase Two (6–12 months) emphasizes digitization of records and basic payroll monitoring with staff training. Phase Three (12–18 months) expands to procurement and admission safeguards, ideally with EFCC collaboration. Phase Four (18–24 months) introduces advanced predictive budgeting and resource optimization, supported by improved infrastructure. **AI offers a promising pathway.** It cannot replace sound governance or adequate funding. Yet when thoughtfully implemented, it can significantly strengthen financial management at IMSU, KOMU, and similar institutions across Nigeria.

Recommendations

Government should: Increase education funding to UNESCO benchmark of 15 to 20 per cent. Imo State Government should mandate quarterly publication of machine readable budget performance data from IMSU and KOMU. TETFund should include AI readiness criteria in intervention funding applications.

University administrators should: Establish AI and Digital Governance Committees within governing councils. Digitise financial records for the past five years as immediate priority. Implement biometric attendance systems for payroll verification before full AI deployment. Partner with EFCC for joint training on AI powered fraud detection.

Conclusion

This descriptive study examined financial management vulnerabilities at Imo State University and Kingsley Ozumba Mbadiwe University in Imo State, Nigeria. The findings reveal that IMSU exhibits more severe vulnerabilities than KOMU due to institutional age, complexity, and entrenched manual processes. The admission racketeering scandal involving 230 fake admission letters provides concrete evidence of systemic failure. Both institutions suffer from inadequate subventions, weak revenue generation, budget inefficiencies, and procurement irregularities. Current manual systems lack real time monitoring capabilities, depend on inconsistent human vigilance, and produce fragmented data that cannot support pattern detection.

The study makes three policy recommendations. First, government must increase education funding and mandate financial data transparency. Second, university administrators must digitise records and establish AI governance committees. Third, AI adoption should follow a phased approach: payroll anomaly detection using open source tools, then procurement oversight, then predictive budgeting. Future research should conduct longitudinal studies tracking AI implementation outcomes, experimental deployments comparing AI assisted with manual audit units, and comparative studies across multiple states. The EFCC Chairman's words resonate: a university that lacks financial accountability cannot credibly train the ethical professionals Nigeria needs.

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