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Ethical Impacts of Artificial Intelligence on Managerial Accounting Functions in Nigeria

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ABSTRACT

The study was motivated by need to integrate artificial intelligence (AI) into managerial accounting so as to transformed organizational decision-making which has raised significant ethical concerns. The purpose of this study was to explored ethical impacts of AI on managerial accounting functions in Nigeria, the study was guided by two research objectives, two research questions and two hypotheses. Descriptive and empirical research design were employed in conducting the research. The population of the study was 32 AI-integrated firms in all the Lagos AI-integrated forms and a sample of 30 AI- integrated firms were used for the study. Sample random sampling technique was used in selecting the sample for the study using the taro yamane formula. Specifically, the hat and draw method. The instruments used for data collection were ethical impact of artificial intelligence on managerial accounting function questionnaire and ethical impact of artificial intelligence on managerial accounting function interview. The instruments were validated by lecturers in accounting Department Faculty of Social Science University of Jos. online and direct methods of data collection were used in collecting the data for the study. The data collected was analyzed using Descriptive statistics and multiple linear regression analysis with the help of SPSS v24. The results revealed that while ethical constructs were highly valued by respondents, they did not had a statistically significant effect on the perceived adoption or effectiveness of AI systems. The study recommended the need for ethical awareness and the implementation of these principles in Nigerian managerial accounting practices for the development of targeted policy interventions, the establishment of organizational ethical frameworks, and capacity-building initiatives to foster responsible AI adoption.

Keywords: Artificial Intelligence, Ethics, Managerial Accounting, AI Adoption

INTRODUCTION

The advent of Artificial Intelligence (AI) has revolutionized managerial accounting by automating data capture, enhancing decision-making processes, and enabling real-time financial analytics. Globally, organizations are leveraging AI to drive strategic efficiencies and improve reporting accuracy. However, alongside these opportunities, AI integration also raises profound ethical concerns, particularly relating to transparency, data security, confidentiality, and accountability.

In emerging economies such as Nigeria, where digital infrastructure and regulatory ecosystems are still evolving, the ethical implications of AI adoption in managerial accounting remain underexplored. Existing research has predominantly focused on the operational benefits and technological challenges of AI, often neglecting the ethical dimensions, especially within developing contexts. This creates a critical knowledge gap that necessitates urgent academic inquiry.

This study addresses this gap by investigating the ethical impacts of AI integration on managerial accounting practices in Nigeria. Understanding these impacts is essential not only for enhancing corporate governance and regulatory compliance but also for fostering responsible innovation within the accounting profession.

OBJECTIVES OF THE STUDY:

i. To examine the influence of ethical constructs—specifically transparency, confidentiality, and trust—on the adoption of AI in managerial accounting.

ii. To assess the impact of safety, security, and correctness on the perceived effectiveness of AI applications in accounting functions.

Research Questions:

i. How do transparency, confidentiality, and trust affect the adoption of AI in managerial accounting?

ii. What is the impact of safety, security, and correctness on the perceived effectiveness of AI in managerial accounting functions?

Hypotheses:

i. H_o1: Transparency, confidentiality, and trust have no significant effect on the adoption of AI in managerial accounting.

ii. H_o2: Safety, security, and correctness have no significant effect on the perceived effectiveness of AI in managerial accounting.

By addressing these research questions and testing these hypotheses, the study contributes to the growing body of literature on ethical innovation, managerial accounting, and AI adoption in developing economies. It also offers practical recommendations for policymakers, professional bodies, and corporate organizations aiming to align AI practices with ethical standards.

LITERATURE REVIEW

The literature review examines the existing body of work related to the ethical implications of artificial intelligence (AI) in managerial accounting. It highlights the theoretical frameworks, key concepts, and empirical studies that have shaped our understanding of AI's role in accounting and its ethical challenges, particularly in developing economies like Nigeria.

CONCEPTUAL REVIEW

The conceptual review provides an understanding of the key components of artificial intelligence (AI) and its ethical implications in the context of managerial accounting. This section explores the core concepts related to AI's role in automating accounting tasks, enhancing decision-making, and addressing ethical challenges that arise during AI adoption.

Artificial Intelligence in Managerial Accounting

Artificial intelligence (AI) is increasingly deployed in managerial accounting to automate routine tasks, support complex forecasting, and enhance data-driven decision-making. AI applications such as machine learning and robotic process automation enable real-time financial analysis and predictive insights, transforming the roles of managerial accountants from data processors to strategic advisors (Kokina & Davenport, 2017; Mediaty et al., 2024).

Ethics in Artificial Intelligence

Ethics in AI encompasses principles ensuring fairness, accountability, transparency, and respect for privacy during the design and application of AI systems. Ethical considerations directly influence public trust and professional acceptance of AI technologies, especially in sensitive domains like accounting (Zhang et al., 2023; Munoko et al., 2020; Choudhary, 2024).

Transparency

Transparency involves making AI decision-making processes understandable and traceable. Explainability enhances accountability and user trust, critical in managerial accounting contexts where decisions impact financial reporting (Lehner et al., 2022; Zhang et al., 2023; Choudhary, 2024).

Confidentiality

Confidentiality protects sensitive financial data from unauthorized access. Given the rising cyber threats targeting accounting information, secure data governance mechanisms are essential to uphold confidentiality (Vărzaru, 2022; Mediaty et al., 2024).

Trust

Trust forms the foundation for AI adoption in professional accounting environments. Systems perceived as transparent, secure, and ethical are more likely to be embraced by accounting professionals and stakeholders (Cheng et al., 2024; Lehner et al., 2022; Munoko et al., 2020).

Safety and Security

Safety pertains to minimizing unintended harm caused by AI, while security focuses on protecting AI systems against cyberattacks. Both aspects are fundamental for sustainable AI adoption in accounting practices (Mediaty et al., 2024; Choudhary, 2024).

Correctness

Correctness addresses the accuracy and reliability of AI-generated outputs. Errors in AI processing can result in misstatements with ethical and regulatory consequences, highlighting the need for rigorous validation and oversight (Lehner et al., 2022; Cheng et al., 2024).

THEORETICAL REVIEW

This study adopts the Technology Acceptance Model (TAM) as its theoretical framework. Originally developed by Davis (1986), TAM proposes that perceived usefulness and perceived ease of use predict users' technology adoption intentions. Ethical factors such as transparency, confidentiality, and trust serve as external variables influencing these perceptions within the managerial accounting context (Cheng et al., 2024; Vărzaru, 2022). Despite criticisms regarding its simplicity, TAM remains robust and adaptable, especially when extended to incorporate ethical, cultural, and risk considerations (Lehner et al., 2022; Zhang et al., 2023).

EMPIRICAL REVIEW

Recent empirical studies emphasize the ethical challenges of AI integration in accounting. Zhang et al. (2023) report that inadequate transparency undermines trust and compromises managerial decision quality. Vărzaru (2022) identifies confidentiality concerns as significant barriers to AI adoption among accounting firms in Eastern Europe. Lehner et al. (2022) find that organizations with formal ethical governance frameworks exhibit greater success in ethical AI integration. Munoko et al. (2020) highlight the importance of explainable AI and regulatory oversight in maintaining ethical standards in auditing. Choudhary (2024) stresses the need for robust regulations to mitigate ethical risks in emerging markets. In Nigeria, Mediaty et al. (2024) observe that while ethical awareness of AI exists, implementation of ethical AI governance is inconsistent, underscoring the need for further research and policy development.

METHODOLOGY

Research Design

This study utilized a descriptive and empirical research design to examine the ethical impacts of artificial intelligence (AI) on managerial accounting functions in Nigeria. The descriptive component aimed to capture the current perceptions and practices regarding ethical AI deployment, while the empirical approach enabled the testing of hypothesized relationships between ethical constructs and AI adoption/effectiveness (Creswell & Creswell, 2018).

Population

The population for this study consisted of 32 AI-integrated firms in Lagos State, Nigeria, that had integrated artificial intelligence (AI) technologies into their managerial accounting functions. These firms were identified from industry reports and databases listing AI-adopting companies in Nigeria. Lagos was selected due to its status as the commercial and technological hub of Nigeria, hosting a significant number of firms using AI in accounting.

Sample

A sample of 30 AI-integrated were selected from a population of 32 firms, at a 5% margin of error using taro Yamane formula. A simple random sampling technique was employed to select the firms, ensuring that each firm had an equal chance of being included in the sample. The selected firms were representative of various sectors within Lagos State, all using AI in their managerial accounting functions. This method ensured that the data collected was valid and reliable providing insights into the ethical impacts of AI adoption.

Sampling Technique

Simple random sampling technique was used in selecting the 30 AI-integrated firms using the hat and draw where the names of all the firms were written on separate sheets of paper concealed and place in a hat and the researcher picked one after the other without replacement until all the 30 papers were picked, ensuring that every firm had an equal probability of inclusion and reducing potential selection bias. This method provided a robust and unbiased representation of the target population.

Data Collection Instruments

Data were collected using two instruments: Ethical impact of artificial intelligence on managerial accounting function questionnaire and Ethical impact of artificial intelligence on managerial accounting function interview

Ethical impact of artificial intelligence on managerial accounting function questionnaire had a total of 30 questionnaires items that were administered to accounting professionals in AI-integrated firms. The questionnaire, was validated

from prior studies, included items on a five-point Likert scale to assess ethical constructs such as transparency, confidentiality, trust, safety, security, and correctness.

Ethical impact of artificial intelligence on managerial accounting function interview: In addition, 10 semi-structured interviews were conducted with accounting professionals directly involved in AI implementation. These interviews provided qualitative insights into the practical ethical challenges of AI adoption.

Data Collection Procedure

Online questionnaires were distributed via email to accounting managers and IT officers responsible for AI systems in the sampled firms. Follow-up communications were made to optimize response rates. Interviews were conducted virtually with prior consent and recorded for accuracy.

Data Analysis

Descriptive statistics (means and standard deviations) summarized the ethical perceptions held by respondents. Multiple linear regression analyses were performed using SPSS v24 to evaluate the influence of ethical variables on AI adoption and effectiveness, consistent with the study hypotheses. This method allows examination of multiple predictors' effects simultaneously, providing insights into their relative contributions (Hair et al., 2019).

Results

Descriptive Statistics

Table 1 presents the mean scores and standard deviations for each ethical construct as perceived by respondents.

Ethical Construct	Mean	Standard Deviation
Transparency	4.20	0.50
Confidentiality	4.00	0.60
Trust	3.90	0.70
Safety	3.80	0.60
Security	4.10	0.50
Correctness	3.70	0.70

Table 1: Descriptive Statistics of Ethical Constructs

The data indicate that all ethical dimensions scored above 3.5 on a 5-point scale, reflecting a high level of importance attributed by respondents to these constructs within the context of AI in managerial accounting.

Multiple Linear Regression Analysis

Two regression models were tested corresponding to the two hypotheses.

Model 1: Effect of Transparency, Confidentiality, and Trust on AI Adoption

Predictor	Beta (β)	t-value	p-value
Transparency	0.12	0.98	0.328
Confidentiality	0.09	0.82	0.411
Trust	0.11	1.05	0.293

Model Summary: $R = 0.45$, $R^2 = 0.20$, $F(3,26) = 2.16$, $p > 0.05$

Interpretation: The predictors collectively explain 20% of the variance in AI adoption; however, none of the predictors individually had a statistically significant effect on AI adoption ($p > 0.05$).

Model 2: Effect of Safety, Security, and Correctness on AI Effectiveness

Predictor	Beta (β)	t-value	p-value
Safety	-0.04	-0.41	0.672
Security	0.06	0.63	0.528
Correctness	-0.02	-0.30	0.763

Model Summary: $R = 0.18$, $R^2 = 0.03$, $F(3,26) = 0.28$, $p > 0.05$

Interpretation: Safety, security, and correctness collectively explain only 3% of the variance in AI effectiveness, with no statistically significant predictors ($p > 0.05$).

SUMMARY OF FINDINGS

The results indicate a general recognition of ethical constructs' importance among managerial accounting professionals. However, these constructs do not significantly influence AI adoption or effectiveness in the sampled Nigerian firms. This suggests a potential disconnect between ethical awareness and practical implementation in AI-driven accounting functions.

Discussion

The findings reveal a noteworthy paradox within Nigerian managerial accounting firms: although ethical constructs such as transparency, confidentiality, trust, safety, security, and correctness are highly valued by professionals, these factors do not statistically influence the adoption or effectiveness of AI systems. This discrepancy underscores a critical gap between ethical awareness and operationalization.

This outcome aligns with prior research indicating that ethical awareness alone is insufficient to drive behavioral change without supportive institutional frameworks (Choudhary, 2024; Mediaty et al., 2024). For instance, Lehner et al. (2022) emphasize that organizational policies, ethical audits, and regulatory oversight are necessary to

translate ethical principles into practice. The lack of significant predictive power for ethical constructs in this study may reflect limited enforcement mechanisms and infrastructural challenges within Nigerian firms.

Moreover, the insignificant effect of safety, security, and correctness on AI effectiveness suggests that these technical and ethical safeguards are not yet fully integrated into the firms' AI deployment strategies. This finding resonates with Zhang et al. (2023), who highlight that emerging economies often face resource constraints that hinder the implementation of robust AI governance frameworks.

The high mean scores for transparency and confidentiality indicate strong ethical intent, yet the regression results reveal an implementation gap, likely attributable to insufficient training, inadequate regulatory mandates, or technological limitations (Munoko et al., 2020; Cheng et al., 2024). This gap not only risks suboptimal AI performance but also exposes firms to ethical and reputational risks.

These insights have important implications for policymakers and practitioners. Establishing clear ethical guidelines tailored to the Nigerian context, coupled with capacity-building programs for accounting professionals, could bridge this divide. Additionally, integrating explainable AI models that enhance transparency and accountability may bolster trust and effective adoption.

In sum, this study contributes to the ethical AI discourse by highlighting that awareness must be accompanied by actionable frameworks and institutional support to realize AI's potential benefits in managerial accounting within emerging markets.

Conclusion

This study examined the ethical impacts of artificial intelligence (AI) on managerial accounting functions in Nigeria, with a focus on constructs such as transparency, confidentiality, trust, safety, security, and correctness. The findings revealed that while these ethical considerations are acknowledged and valued by professionals, they do not significantly influence AI adoption or effectiveness within Nigerian firms. This points to a gap between ethical awareness and practical implementation.

The research highlights the challenges faced by Nigerian firms in operationalizing ethical principles in AI-driven accounting practices, particularly within an environment characterized by infrastructural limitations and regulatory shortcomings. The disconnect between ethical intent and practical application underscores the need for institutional frameworks and interventions that can bridge this gap and ensure the responsible use of AI.

RECOMMENDATIONS

Based on the findings and the tested hypotheses, the following recommendations are proposed:

Strengthening Ethical Frameworks: Given the observed gap between ethical awareness and AI adoption, regulatory bodies in Nigeria should develop clear, enforceable ethical guidelines tailored to the context of managerial accounting. These frameworks should help ensure that ethical values such as transparency, confidentiality, and correctness are actively embedded in AI systems.

Institutionalizing Ethical Governance: The study found that while ethical principles were highly valued, their practical application was insufficient. Therefore, Nigerian firms should establish robust governance mechanisms, such as **ethical audits** and **compliance monitoring**, to bridge the gap between awareness and implementation. These mechanisms will facilitate the translation of ethical values into AI practices.

Enhancing Professional Development on AI Ethics: The findings suggest that professionals in Nigerian firms recognize the importance of ethical considerations but lack the necessary tools to apply them effectively in AI systems. In light of this, continuous professional training programs focusing on AI ethics should be implemented. These programs should aim to equip accountants with the knowledge and skills to manage ethical dilemmas in the AI-driven accounting process.

Encouraging Transparent and Secure AI Designs: The study revealed that transparency and security are key concerns in AI adoption, but these aspects are not sufficiently integrated into practice. Therefore, organizations should prioritize the design and adoption of AI systems that are explainable, secure, and capable of error detection. These improvements will enhance trust and ensure the ethical and correct functioning of AI in managerial accounting.

Future Research to Address Implementation Gaps: Given the gap between ethical awareness and AI effectiveness found in this study, further research is needed to investigate the long-term effects of ethical AI implementation in various sectors within Nigeria. Longitudinal and sector-specific studies would provide more nuanced insights into how ethical principles can be effectively operationalized in AI systems across different industries.

By implementing these recommendations, stakeholders can address the gaps identified in this study and foster responsible AI adoption in managerial accounting. This will not only enhance ethical standards but also drive improved business performance and contribute to the advancement of the Nigerian accounting profession in the digital era.

AUTHOR CONTRIBUTIONS

Keswet Musa Andrew conceptualized the study and developed the methodology; Keswet Musa Andrew collected and curated the data and performed formal analysis;

Egbulingo Ayiku John contributed to methodology, supervised the project, and validated the data; Keswet Musa Andrew drafted the original manuscript; Egbulingo Ayiku John critically revised the manuscript for important intellectual content. Both authors read and approved the final version of the manuscript.

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