

Examining the Risks and Ethical Challenges of *Nume* as the World's First AI CFO in Financial Accounting

Lilian Mbatha

The Cooperative University of Kenya, School of Business and Economic Studies

DOI: <https://doi.org/10.47772/IJRISS.2026.1014MG0180>

Received: 29 August 2026; Accepted: 03 September 2026; Published: 17 September 2026

ABSTRACT

Nume, the world's first AI-powered Chief Financial Officer (AI CFO), represents a transformative shift in financial accounting, challenging traditional assumptions about executive leadership, financial stewardship, and organizational accountability. While this innovation promises improved efficiency, speed, and data-driven decision-making, it raises pressing concerns about ethical accountability, algorithmic transparency, governance control, and regulatory compliance. This study examined the risks and ethical challenges associated with *Nume* and its implications for financial accounting practice and corporate governance. The study adopted a mixed-methods design involving 427 finance professionals, auditors, regulators, and governance experts from 11 countries. Quantitative data were analyzed using descriptive statistics and structural equation modeling, while qualitative data were examined through thematic analysis. Findings show that respondents perceived accountability ambiguity (84.7%), algorithmic bias (81.3%), cybersecurity risk (78.9%), and lack of explainability (72.6%) as the most critical ethical and governance concerns associated with *Nume*. Structural equation modeling indicates that ethical governance significantly increases trust in AI financial outputs ($\beta = 0.68, p < 0.001$), while accountability gaps significantly reduce adoption confidence ($\beta = -0.59, p < 0.001$), with the model explaining 71.4% of variance in acceptance of AI CFO systems ($R^2 = 0.714$). The study concludes that the primary challenge of AI CFO adoption is not capability but accountability. While *Nume* enhances efficiency and decision support, it cannot yet replicate fiduciary judgment or ethical reasoning required in executive financial leadership. AI CFOs should therefore function as decision-support tools rather than autonomous financial authorities. The study proposes an AI Financial Accountability Framework emphasizing human oversight, explainability, ethical auditing, and regulatory alignment. Future research should explore long-term performance effects, cross-platform comparisons, and emerging regulatory responses to AI-driven financial leadership. The study is important for policy, practice, and academia. For policymakers, it supports the development of AI-specific financial reporting standards and accountability rules for AI systems. For practitioners such as boards, CFOs, auditors, and investors, it highlights governance risks and the need for human oversight in AI-based financial decision-making. For academia, it extends Agency Theory by introducing algorithmic agency and adds to research on AI ethics in financial accounting. The study also proposes an AI Financial Accountability Framework based on transparency, explainability, ethical auditing, and human oversight.

Keywords: *Nume*, Artificial Intelligence, AI CFO, Financial Accounting, Ethical AI, Algorithmic Accountability

INTRODUCTION

Nume is an AI-powered Chief Financial Officer platform developed by Scaleup Finance, a Copenhagen-based fintech company specializing in financial management solutions for startups and small and medium-sized enterprises (SMEs). Presented by its developer as an AI CFO, *Nume* is designed to automate and support key CFO functions, including financial reporting, forecasting, cash-flow management, budgeting, financial monitoring, and strategic financial analysis (Nume, 2026a). According to the developer, *Nume* draws on the experience of a team of more than 30 CFOs who have collectively worked with more than 500 startups (Nume, 2026b). Its emergence represents an important development in the application of artificial intelligence to functions traditionally associated with senior financial leadership. However, the description of *Nume* as an AI

CFO reflects its stated market positioning and integrated CFO-level functionality and does not, by itself, imply that the platform possesses the legal status, fiduciary responsibility, or independent corporate authority of a human CFO. The introduction of *Nume* comes at a time when organizations are increasingly seeking technology-driven solutions to improve efficiency, reduce operational costs, and enhance decision-making quality. Recent advances in artificial intelligence have enabled financial systems to process vast amounts of structured and unstructured data, generate insights in real time, and support strategic planning activities that were previously dependent on human expertise (Davenport & Ronanki, 2018; Dwivedi et al., 2023). *Nume* extends these capabilities by positioning itself not merely as a financial management platform but as an AI CFO capable of supporting or performing functions traditionally executed by senior finance executives.

The growing interest in *Nume* reflects broader changes within the accounting profession. Modern CFOs are increasingly expected to provide strategic leadership, manage organizational risk, ensure regulatory compliance, oversee financial reporting, and communicate effectively with stakeholders. By automating many of these responsibilities, *Nume* has the potential to transform how organizations manage financial operations and make strategic decisions. Proponents argue that *Nume* can improve forecasting accuracy, increase operational efficiency, enhance financial visibility, and provide continuous data-driven insights that support organizational performance (Kokina & Davenport, 2020). These potential benefits have positioned *Nume* as one of the most ambitious applications of artificial intelligence within the accounting and finance profession. Despite these opportunities, the emergence of *Nume* raises fundamental questions regarding accountability, governance, and ethical responsibility. Unlike traditional accounting software, which operates under direct human supervision, *Nume* is designed to participate in high-level financial decision-making processes. Consequently, concerns arise regarding who should be held accountable when AI-generated financial recommendations lead to inaccurate reporting, poor investment decisions, compliance breaches, or stakeholder losses. Accountability is a central principle in financial accounting and corporate governance, yet existing governance frameworks were developed on the assumption that key financial decisions are made by human actors rather than autonomous systems (Jensen & Meckling, 1976; IFAC, 2021).

The issue of accountability becomes even more complex when considering the degree of functional autonomy associated with AI-powered financial systems such as *Nume*. In this study, autonomy does not imply that *Nume* possesses independent legal personality, fiduciary responsibility, or unrestricted authority to execute corporate financial decisions without human involvement. Rather, functional autonomy refers to the capacity of the system to process financial data, generate forecasts, identify patterns and risks, produce analyses, and formulate financial recommendations with limited human intervention at particular stages of the analytical process (Nume, 2026a). Indeed, *Nume*'s current architecture provides read-only access to connected financial data, meaning that the platform cannot independently modify, delete, or transfer users' financial data (Nume, 2026c). Scholars have argued that increasing levels of functional autonomy can nevertheless create accountability gaps because responsibility becomes distributed among human users, software developers, organizational management, data providers, and algorithmic systems (Floridi et al., 2018; Mittelstadt et al., 2016). In the context of *Nume*, this raises important questions regarding responsibility where AI-generated recommendations contribute to inaccurate reporting, inappropriate financial decisions, compliance breaches, or stakeholder losses. The governance challenge therefore concerns not whether *Nume* legally replaces the human CFO, but how accountability should be allocated when AI increasingly influences financial judgments traditionally associated with executive leadership.

The adoption of *Nume* also introduces concerns relating to algorithmic bias and data governance. Because AI systems rely heavily on historical and real-time data, the quality of their outputs depends on the quality of the data used to train and operate them. Inaccurate, incomplete, or biased data may produce distorted financial recommendations that affect budgeting, forecasting, investment decisions, and risk assessments (Barocas, Hardt, & Narayanan, 2019). Given *Nume*'s intended role in executive financial leadership, such risks could have significant implications for organizational performance and stakeholder confidence. Cybersecurity represents another critical challenge associated with *Nume*. As an AI CFO, *Nume* requires access to highly sensitive financial information, including cash-flow data, budgets, forecasts, financial statements, and strategic plans. This concentration of valuable information may increase exposure to cyber threats, data breaches, and unauthorized manipulation of financial outputs. Recent AI governance literature emphasizes that effective oversight

mechanisms must address not only ethical concerns but also security and resilience risks associated with autonomous decision-making systems (OECD, 2024; World Economic Forum, 2025). The emergence of *Nume* has also attracted the attention of policymakers and regulators. Globally, there is growing recognition that existing regulatory frameworks may not adequately address the governance challenges associated with autonomous AI systems. Initiatives such as the OECD AI Principles, the European Union AI Act, and various national AI strategies have emphasized the importance of transparency, accountability, fairness, and human oversight in AI deployment (European Commission, 2024; OECD, 2024). However, these frameworks provide limited guidance regarding AI systems operating in executive financial roles. Consequently, organizations adopting *Nume* may face uncertainty regarding governance expectations, accountability structures, and regulatory obligations.

Although research on artificial intelligence in accounting has expanded considerably, existing studies have primarily focused on auditing, fraud detection, robotic process automation, financial analytics, and decision-support systems (Issa et al., 2016; Sutton et al., 2016; Kokina & Davenport, 2020; Dwivedi et al., 2023). More recently, scholars have explored the governance and ethical implications of AI adoption in organizational settings (Floridi et al., 2018; OECD, 2024). However, limited attention has been given to AI-powered executive financial leadership systems. In particular, there is a lack of empirical evidence regarding stakeholder perceptions of accountability, transparency, explainability, algorithmic bias, and governance challenges associated with *Nume* as the first AI-powered Chief Financial Officer. This gap is significant because *Nume* differs from conventional accounting technologies by positioning itself as an AI system capable of supporting executive-level financial decision-making. While comparable platforms such as Datarails, Jirav, Cube, and Vic.ai primarily provide financial planning and automation functions, *Nume* is designed to perform broader CFO-related responsibilities. Consequently, the governance, accountability, and ethical implications of *Nume* may differ substantially from those associated with traditional accounting technologies. Against this background, this study examines the risks and ethical challenges associated with *Nume* as the first AI-powered Chief Financial Officer in financial accounting. Specifically, the study investigates stakeholder perceptions regarding accountability ambiguity, transparency, explainability, algorithmic bias, cybersecurity risks, governance readiness, and trust in *Nume*-generated financial decisions. The study contributes to the emerging literature on AI governance in accounting and proposes an AI Financial Accountability Framework to support the responsible adoption of AI-powered financial leadership systems.

LITERATURE REVIEW & THEORETICAL FRAMEWORK

Artificial Intelligence in Financial Accounting

Artificial intelligence has become an important tool in financial accounting, enabling automation of tasks such as data entry, reconciliation, auditing, forecasting, and risk analysis. According to Brynjolfsson and McAfee (2017), AI is transforming decision-making systems by enabling machines to perform cognitive tasks traditionally reserved for humans. In accounting, AI adoption has improved efficiency and reduced operational costs, particularly in large-scale financial processing environments (Davenport & Ronanki, 2018). More recent studies show that AI is increasingly being integrated into strategic financial functions, moving beyond operational automation to predictive and prescriptive decision-making (Appelbaum et al., 2017; Kokina & Davenport, 2020). Within this evolution, *Nume* represents a further advancement by functioning not only as a tool but as an AI-enabled financial decision-support system.

Emergence of AI CFO Systems and *Nume*

For purposes of this study, an important distinction is made between an AI-enabled accounting platform, an AI financial decision-support system, and an AI CFO. An AI-enabled accounting platform primarily automates accounting processes such as transaction processing, reconciliation, classification, reporting, and financial data analysis (Appelbaum et al., 2017; Kokina & Davenport, 2020). An AI financial decision-support system extends these functions by generating forecasts, scenarios, risk assessments, and recommendations that assist managers in making financial decisions while final authority remains with human decision-makers (Davenport & Ronanki, 2018; Huang & Rust, 2021). An AI CFO represents a more integrated application of artificial intelligence across

multiple functions traditionally associated with the CFO role, including budgeting, forecasting, cash-flow management, financial reporting, risk analysis, performance monitoring, and strategic financial analysis. *Nume* currently integrates several of these functions, including automated reporting, forecasting, continuous financial monitoring, scenario planning, and financial analysis (Nume, 2026a). In this study, the term AI CFO therefore refers primarily to the breadth and integration of CFO-level functions performed or supported by the technology rather than the transfer of statutory, fiduciary, or legal responsibility from a human executive to an artificial intelligence system. This distinction enables *Nume*'s technological capabilities to be examined without assuming that the platform possesses the formal corporate authority of a human CFO.

The concept of AI CFO systems reflects the growing ambition to automate executive financial leadership. These systems combine machine learning, predictive analytics, and natural language processing to perform CFO-level functions such as budgeting, forecasting, and capital allocation decisions. While research on AI in finance is expanding, most studies focus on decision support systems rather than fully autonomous CFO platforms (Kokina & Davenport, 2020; Huang & Rust, 2021). *Nume* is therefore a novel development because it extends AI from advisory roles into executive financial authority, raising new questions about the boundaries between human and machine responsibility. Kaplan and Haenlein (2020) argue that AI systems with high autonomy require stronger governance structures due to their ability to influence strategic outcomes without human intervention. This is particularly relevant for *Nume*, which directly participates in financial decision-making processes that affect organizational performance and stakeholder trust.

Ethical, Governance, and Risk Challenges in AI Finance

A major concern in AI-driven financial systems is algorithmic transparency. Many AI models operate as 'black boxes,' making it difficult to explain how decisions are generated (Burrell, 2016). This lack of explainability creates accountability gaps, particularly in financial reporting environments where traceability is essential. Studies by Floridi et al. (2018) emphasize that ethical AI must be transparent, accountable, and aligned with human values. In financial contexts, these principles are critical because errors or biases in automated systems can lead to financial misstatements, regulatory violations, or loss of investor confidence. Cybersecurity is another key concern. As AI systems like *Nume* handle sensitive financial data, they become targets for cyber threats and data manipulation (OECD, 2021). Additionally, algorithmic bias can arise when AI systems are trained on incomplete or unbalanced financial datasets, potentially leading to distorted financial outcomes (Barocas, Hardt & Narayanan, 2019). Thus, while *Nume* enhances efficiency, it also introduces new categories of operational, ethical, and governance risks that traditional accounting frameworks are not fully equipped to manage. A synthesis of the literature reviewed in this study reveals three important research gaps. First, existing research on artificial intelligence in accounting has concentrated predominantly on audit automation, fraud detection, robotic process automation, financial analytics, and conventional decision-support systems (Appelbaum et al., 2017; Kokina & Davenport, 2020). Comparatively limited empirical attention has been given to AI systems integrating multiple functions traditionally associated with executive financial leadership. Second, although the broader AI ethics literature has extensively examined transparency, fairness, accountability, explainability, and algorithmic bias (Barocas et al., 2019; Burrell, 2016; Floridi et al., 2018), these issues remain insufficiently examined within the specific context of AI-powered CFO systems and financial accounting. Third, existing technology-adoption research has largely emphasized perceived usefulness, ease of use, and adoption intentions (Davis, 1989), leaving comparatively limited empirical evidence regarding how accountability ambiguity, governance readiness, cybersecurity risk, algorithmic bias, and explainability influence stakeholder trust in AI-supported financial leadership. This study addresses these gaps by examining *Nume* as an emerging case of AI-powered executive financial functionality and empirically investigating stakeholder perceptions of its associated ethical, governance, accountability, and adoption challenges. The study's originality therefore lies not merely in examining a new technology, but in bringing together financial accounting, AI ethics, corporate governance, algorithmic accountability, cybersecurity, and technology adoption within a single empirical model. It further extends the discussion from the automation of individual accounting tasks to the governance implications of AI systems capable of supporting multiple CFO-level functions and proposes an AI Financial Accountability Framework for their responsible organizational adoption.

Theoretical Framework

This study is grounded in Agency Theory, Stakeholder Theory, and the Technology Acceptance Model (TAM), which collectively provide complementary explanations for the accountability, governance, trust, and adoption issues associated with AI-powered financial leadership. Agency Theory explains conflicts arising from information asymmetry and the delegation of decision-making authority between principals and agents (Jensen & Meckling, 1976). Traditionally, boards and shareholders delegate financial stewardship responsibilities to human executives, including the CFO. In the context of *Nume*, AI introduces an additional layer of algorithmic agency because financial analysis and recommendations may increasingly be generated by a technological system rather than exclusively by a human financial executive. This potentially complicates the allocation of responsibility among management, users, developers, and the AI system, particularly where algorithmic outputs are difficult to explain or produce adverse consequences (Floridi et al., 2018; Mittelstadt et al., 2016). Stakeholder Theory broadens this accountability perspective by recognizing that AI-supported financial decisions may affect multiple stakeholders, including shareholders, employees, customers, auditors, regulators, creditors, and boards (Freeman, 1984). The theory is particularly relevant to concerns regarding algorithmic bias, cybersecurity, transparency, and explainability because responsible financial governance requires organizations to consider how AI-generated outputs distribute risks and benefits across affected stakeholders. Finally, the Technology Acceptance Model explains the adoption dimension of the study. TAM proposes that technology acceptance is influenced by users' perceptions of the usefulness and usability of a technological system (Davis, 1989). In the context of AI-powered financial leadership, however, perceived usefulness may be insufficient to generate adoption where users perceive substantial accountability, cybersecurity, bias, or governance risks. Accordingly, the three theories are integrated in this study: Agency Theory explains accountability and oversight concerns, Stakeholder Theory explains the broader ethical and governance consequences of AI-supported financial decisions, and TAM explains how these perceptions ultimately influence trust and adoption of *Nume*.

Hypothesis Development

The theoretical arguments suggest that the ethical and governance characteristics surrounding AI-powered financial systems are important determinants of stakeholder trust and adoption. From an Agency Theory perspective, ambiguity regarding responsibility for AI-generated financial recommendations increases information and accountability risks because it may become difficult to determine whether responsibility rests with management, users, system developers, or other actors involved in the AI decision process (Jensen & Meckling, 1976; Mittelstadt et al., 2016). Greater accountability concerns are therefore expected to reduce stakeholder trust in AI-powered financial leadership. Accordingly: **H1:** Accountability concerns have a significant negative influence on trust in *Nume*. Effective governance structures can mitigate these agency risks by establishing oversight, responsibility, controls, and mechanisms for reviewing AI-generated financial outputs. Responsible AI literature similarly emphasizes human oversight and governance as important conditions for trustworthy AI deployment (Floridi et al., 2018; OECD, 2024). Organizations with stronger governance readiness should therefore demonstrate greater confidence in AI-supported financial systems. Accordingly: **H2:** Governance readiness has a significant positive influence on trust in *Nume*. Transparency and explainability are particularly important in financial accounting because financial recommendations and reporting judgments should be capable of being understood, scrutinized, and justified. Algorithmic opacity may undermine accountability and stakeholder confidence where users cannot establish how an AI system generated a particular recommendation (Burrell, 2016; Rudin, 2019). Greater explainability should therefore increase trust in AI-generated financial outputs. Accordingly: **H3:** Transparency and explainability have a significant positive influence on trust in *Nume*. Cybersecurity risk represents an additional barrier to AI adoption because AI-powered financial systems interact with commercially sensitive financial information. Perceptions that such systems may expose organizations to unauthorized access, manipulation, privacy breaches, or loss of financial information can reduce willingness to adopt them (OECD, 2021). Accordingly: **H4:** Perceived cybersecurity risk has a significant negative influence on intention to adopt *Nume*. Finally, algorithmic bias may undermine confidence in AI-generated financial recommendations where underlying data, model assumptions, or computational processes systematically produce distorted or inequitable outcomes (Barocas et al., 2019). From a stakeholder perspective, such outcomes may expose organizations and affected stakeholders to inappropriate

financial decisions and governance risks. Accordingly: **H5:** Perceived algorithmic bias has a significant negative influence on intention to adopt *Nume*.

METHODOLOGY

This study employed an explanatory sequential mixed-methods design to examine the risks and ethical challenges associated with *Nume* as the first AI-powered Chief Financial Officer (AI CFO). The approach was appropriate because the study sought to examine measurable relationships among ethical, governance, trust, and adoption variables while obtaining deeper professional perspectives on the implications of AI-powered financial leadership (Creswell & Plano Clark, 2018). The study involved 427 respondents drawn from 11 countries and comprising accountants, auditors, CFOs and finance managers, governance professionals, and technology specialists. Participants were recruited through purposive and snowball sampling based on their professional involvement or expertise in financial accounting, auditing, financial management, governance, regulation, or technology-enabled finance (Saunders et al., 2019). A total of 427 valid responses were obtained, representing an 85.4% response rate. In addition, 15 experts were purposively selected for semi-structured interviews to provide deeper interpretation of the ethical, accountability, transparency, and governance issues emerging from the quantitative findings.

Quantitative data were collected using a structured questionnaire measured on a five-point Likert scale ranging from 1 = strongly disagree to 5 = strongly agree. The instrument measured accountability concerns, algorithmic bias, cybersecurity risk, transparency and explainability, governance readiness, trust in *Nume*, and adoption intention. The constructs were informed by established literature on technology acceptance, AI ethics, algorithmic accountability, and governance and were contextualized to AI-powered financial leadership (Davis, 1989; Floridi et al., 2018; Mittelstadt et al., 2016). The questionnaire was reviewed by experts in accounting, governance, and artificial intelligence to establish content validity. Internal consistency was assessed using Cronbach's alpha and composite reliability, while convergent validity was evaluated using Average Variance Extracted (AVE). All reported constructs exceeded the recommended Cronbach's alpha and composite reliability threshold of 0.70 and the AVE threshold of 0.50 (Fornell & Larcker, 1981; Hair et al., 2022). Quantitative data were analyzed using descriptive statistics, correlation analysis, and Structural Equation Modeling (SEM). SEM was employed to test the hypothesized relationships among accountability concerns, governance readiness, transparency and explainability, cybersecurity risk, algorithmic bias, trust, and adoption intention because it permits simultaneous examination of relationships among multiple constructs (Hair et al., 2022; Kline, 2023). Model adequacy was assessed using χ^2/df , Comparative Fit Index (CFI), Tucker-Lewis Index (TLI), Root Mean Square Error of Approximation (RMSEA), and Standardized Root Mean Square Residual (SRMR), while statistical significance was evaluated at $p < .05$. Qualitative interview data were analyzed thematically through familiarization, coding, theme development, review, and interpretation following Braun and Clarke (2022). The qualitative findings were subsequently integrated with the quantitative results to explain and contextualize the statistical patterns. Participation was voluntary, informed consent was obtained from all respondents, and confidentiality was maintained throughout the study. Findings were reported in aggregate form, while interview responses were presented thematically to protect participants' identities. Methodological triangulation through integration of questionnaire and interview evidence further enhanced the credibility of the findings (Creswell & Plano Clark, 2018).

Table 1: Distribution of Respondents by Country (N = 427)

Country	Frequency	Percentage (%)
Kenya	146	34.2
South Africa	52	12.2
Nigeria	46	10.8
Ghana	35	8.2
Uganda	32	7.5
Tanzania	29	6.8

Rwanda	23	5.4
United Kingdom	20	4.7
United States	18	4.2
Denmark	15	3.5
India	11	2.6
Total	427	100

The respondents represented 11 countries, providing a cross-jurisdictional perspective on the governance and ethical implications of AI-powered financial leadership. Kenya accounted for the largest proportion of respondents, while participants from other African and international jurisdictions provided comparative professional perspectives across different financial, technological, and regulatory environments. The geographical distribution was not intended to produce nationally representative estimates; rather, it reflected the purposive and snowball sampling strategy used to recruit professionals with expertise relevant to the study.

Table 2: Operationalization of Study Constructs

Construct	Illustrative measurement focus	Items	Scale
Accountability Concerns	Clarity of responsibility for AI-generated financial decisions; liability for errors; allocation of responsibility between users, management and developers	5	1–5
Algorithmic Bias	Potential for biased data or algorithms to distort forecasts, recommendations and financial decisions	4	1–5
Cybersecurity Risk	Data security, unauthorized access, manipulation of financial information and system vulnerability	4	1–5
Transparency & Explainability	Ability to understand, trace and justify AI-generated financial recommendations	5	1–5
Governance Readiness	Human oversight, internal controls, governance structures and organizational capacity to supervise AI	5	1–5
Trust in <i>Nume</i>	Confidence in the reliability, integrity and appropriateness of AI-generated financial outputs	4	1–5
Adoption Intention	Organizational willingness and intention to use AI CFO technologies	4	1–5

The quantitative instrument consisted of structured items measuring the principal ethical, governance, and technology-adoption constructs examined in the study. Items were rated using a five-point Likert scale ranging from 1 = strongly disagree to 5 = strongly agree. Construct development was informed by established literature on AI ethics, algorithmic accountability, technology acceptance, governance, and cybersecurity, while wording was contextualized to AI-powered financial leadership and *Nume* (Davis, 1989; Floridi et al., 2018; Hair et al., 2022; Mittelstadt et al., 2016). The questionnaire measured accountability concerns, algorithmic bias, cybersecurity risk, transparency and explainability, governance readiness, trust in *Nume*, and adoption intention. Higher scores represented stronger perceptions of the respective construct.

RESULTS AND DISCUSSION

The study sought to examine the risks and ethical challenges associated with *Nume* as the first AI-powered Chief Financial Officer (AI CFO). A total of 427 valid responses were analyzed, representing a response rate of 85.4%. The majority of respondents were accountants (32.6%), auditors (24.8%), finance managers and CFOs (21.5%), governance professionals (11.2%), and technology specialists (9.9%).

Table 3: Demographic Profile of Respondents (N = 427)

Category	Frequency	Percentage (%)
Accountants	139	32.6

Auditors	106	24.8
CFOs/Finance Managers	92	21.5
Governance Professionals	48	11.2
Technology Specialists	42	9.9
Total	427	100

Table 3 shows that accountants constituted the largest proportion of respondents (32.6%), followed by auditors (24.8%) and CFOs/finance managers (21.5%). This distribution suggests that the findings reflect perspectives from professionals directly involved in financial reporting, governance, and decision-making processes relevant to Nume adoption.

Descriptive analysis revealed strong concerns regarding the governance implications of Nume. Accountability ambiguity recorded the highest mean score ($M = 4.41$, $SD = 0.63$), followed by algorithmic bias ($M = 4.27$, $SD = 0.71$), cybersecurity risk ($M = 4.19$, $SD = 0.74$), lack of explainability ($M = 4.13$, $SD = 0.77$), and regulatory uncertainty ($M = 4.08$, $SD = 0.79$). These findings indicate that respondents perceive governance and ethical issues as more significant barriers to Nume adoption than technological capability itself.

Table 4: Descriptive Statistics of Risks and Ethical Challenges Associated with Nume

Variable	Mean	Std. Dev.	Rank
Accountability Ambiguity	4.41	0.63	1
Algorithmic Bias	4.27	0.71	2
Cybersecurity Risk	4.19	0.74	3
Lack of Explainability	4.13	0.77	4
Regulatory Uncertainty	4.08	0.79	5

Accountability ambiguity recorded the highest mean score ($M = 4.41$, $SD = 0.63$), indicating that respondents view responsibility for AI-generated financial decisions as the most significant challenge facing Nume.

The reliability analysis demonstrated strong internal consistency across all constructs. Cronbach's alpha values exceeded the recommended threshold of 0.70 (Hair et al., 2022), ranging from 0.811 for cybersecurity risk to 0.912 for accountability concerns. Composite reliability values ranged between 0.845 and 0.931, while Average Variance Extracted (AVE) values exceeded the recommended 0.50 threshold, confirming convergent validity (Fornell & Larcker, 1981).

Table 5: Reliability and Validity Assessment

Construct	Cronbach's Alpha	Composite Reliability	AVE
Accountability	0.912	0.931	0.772
Algorithmic Bias	0.884	0.903	0.702
Cybersecurity Risk	0.811	0.845	0.653
Explainability	0.867	0.891	0.688
Governance Readiness	0.895	0.916	0.731
Trust in Nume	0.907	0.928	0.756

Correlation analysis revealed significant relationships among the study variables. Accountability concerns were negatively associated with trust in Nume ($r = -0.624$, $p < 0.001$), while governance readiness demonstrated a positive association with trust ($r = 0.687$, $p < 0.001$). Transparency and explainability also exhibited strong positive relationships with organizational confidence in Nume ($r = 0.651$, $p < 0.001$). These findings suggest that

trust in AI-driven financial leadership is largely dependent on the quality of governance mechanisms surrounding the technology.

Table 6: Correlation Matrix of Study Variables

Variable	1	2	3	4	5	6
1. Accountability Concerns	1					
2. Algorithmic Bias	0.541***	1				
3. Cybersecurity Risk	0.487***	0.462***	1			
4. Transparency & Explainability	-0.573***	-0.496***	-0.428***	1		
5. Governance Readiness	-0.602***	-0.518***	-0.451***	0.634***	1	
6. Trust in Nume	-0.624***	-0.552***	-0.481***	0.651***	0.687***	1

Structural Equation Modeling was conducted to test the proposed relationships. The model demonstrated satisfactory fit statistics ($\chi^2/df = 2.31$, CFI = 0.947, TLI = 0.938, RMSEA = 0.056, SRMR = 0.048), indicating an acceptable fit between the proposed model and the observed data (Hair et al., 2022). The results showed that accountability concerns significantly reduced trust in Nume ($\beta = -0.591$, $p < 0.001$), while governance readiness positively influenced trust ($\beta = 0.682$, $p < 0.001$). Transparency and explainability also had a significant positive effect on trust ($\beta = 0.471$, $p < 0.001$). Collectively, the model explained 71.4% of the variance in organizational acceptance of Nume ($R^2 = 0.714$), suggesting substantial explanatory power.

Table 7: Structural Model Results

Hypothesized Relationship	β	t-value	p-value	Decision
Accountability → Trust in Nume	-0.591	9.83	<0.001	Supported
Governance Readiness → Trust in Nume	0.682	11.47	<0.001	Supported
Explainability → Trust in Nume	0.471	7.95	<0.001	Supported
Cybersecurity Risk → Adoption Intention	-0.418	6.71	<0.001	Supported
Algorithmic Bias → Adoption Intention	-0.526	8.94	<0.001	Supported

Table 7 shows that governance readiness has the strongest positive influence on trust in Nume ($\beta = 0.682$, $p < 0.001$), while accountability concerns significantly reduce trust ($\beta = -0.591$, $p < 0.001$). The model explains 71.4% of the variance in organizational acceptance of Nume, indicating strong predictive power.

Table 8: Model Fit Statistics

Indicator	Value	Recommended
χ^2/df	2.31	< 3.00
CFI	0.947	> 0.90
TLI	0.938	> 0.90
RMSEA	0.056	< 0.08
SRMR	0.048	< 0.08
R^2	0.714	Strong

The qualitative findings reinforced and contextualized the quantitative results, with three dominant themes emerging from the interviews. First, respondents acknowledged Nume's potential to improve forecasting,

reporting efficiency, and real-time financial visibility, demonstrating the perceived value of AI in supporting financial management. Second, participants consistently questioned who should bear responsibility where AI-generated recommendations contribute to adverse financial outcomes, reinforcing concerns regarding accountability ambiguity and the allocation of responsibility among users, management, and technology providers (Floridi et al., 2018). Third, respondents emphasized that *Nume* should augment rather than replace human financial leadership because ethical reasoning, stakeholder judgment, and fiduciary responsibility ultimately require human oversight. This finding is consistent with concerns regarding algorithmic opacity and its implications for organizational trust (Burrell, 2016). The findings indicate that participants recognized the potential benefits of *Nume* while simultaneously emphasizing the need for accountability, explainability, and human oversight. Importantly, these findings represent professional perceptions rather than direct evidence of financial errors, cybersecurity incidents, reporting inaccuracies, or autonomous decisions by *Nume* and should therefore be interpreted as perceived governance and ethical risks associated with AI-powered financial leadership.

Based on the quantitative and qualitative findings, the study proposes an AI Financial Accountability Framework for the responsible use of AI CFO systems. The framework recognizes that AI may support CFO-level functions while ultimate fiduciary and governance responsibility remains with human decision-makers. It comprises five interconnected controls: **human approval**, requiring material AI-generated financial recommendations to remain subject to appropriate human authorization; **accountability allocation**, clearly defining responsibility among boards, management, finance professionals, users, and technology providers; **explainability and audit trails**, ensuring that material AI-generated outputs can be traced, reviewed, and justified; **cybersecurity and data governance**, protecting financial information and monitoring system vulnerabilities; and **escalation and ethical oversight**, requiring high-risk, uncertain, or potentially biased outputs to be referred for human review. These controls are consistent with principles of accountable and human-centred AI governance (Floridi et al., 2018; OECD, 2021).

The framework therefore positions *Nume* as an AI-enabled financial decision-support system operating within a human accountability structure rather than as an independent fiduciary authority. Its central principle is that the greater the influence of AI on financial judgment, the stronger the corresponding requirements for human oversight, transparency, auditability, and accountability.

CONCLUSION

This study examined the risks and ethical challenges associated with *Nume* as the first AI-powered Chief Financial Officer (AI CFO) in financial accounting. The findings revealed that accountability ambiguity ($M = 4.41$), algorithmic bias ($M = 4.27$), cybersecurity risks ($M = 4.19$), and lack of explainability ($M = 4.13$) constitute the most significant challenges to the adoption of AI-driven financial leadership systems. Further, accountability concerns significantly reduced trust in *Nume* ($\beta = -0.591$, $p < 0.001$), while governance readiness significantly enhanced trust ($\beta = 0.682$, $p < 0.001$). The study concludes that the primary risks associated with *Nume* extend beyond technology and are rooted in accountability, transparency, fairness, and security. The findings suggest that organizations remain concerned about who bears responsibility for AI-generated financial decisions, how such decisions can be explained and justified, whether algorithmic outputs are free from bias, and how sensitive financial data can be protected from cyber threats. These concerns present significant ethical challenges because they directly affect stakeholder trust, regulatory compliance, professional responsibility, and the integrity of financial reporting. While *Nume* offers considerable potential to enhance forecasting, reporting efficiency, financial analysis, and strategic decision-making, its adoption without adequate safeguards may expose organizations to governance failures, ethical dilemmas, and reputational risks. Consequently, the study argues that AI-powered financial leadership should not be evaluated solely on the basis of efficiency and accuracy but also on its ability to uphold the fundamental accounting principles of accountability, transparency, fairness, and stewardship. The study contributes to the emerging literature on artificial intelligence in accounting by extending Agency Theory into the context of algorithmic decision-making and proposing an AI Financial Accountability Framework for *Nume* based on transparency, explainability, human oversight, and ethical compliance. Ultimately, the future success of *Nume* will depend not only on technological advancement but also on the establishment of robust governance mechanisms capable of ensuring that AI-driven financial decisions

remain ethical, accountable, transparent, and aligned with organizational and stakeholder interests. Therefore, *Nume* should be viewed as a powerful complement to human financial leadership rather than a complete substitute for professional judgment and fiduciary responsibility.

LIMITATIONS AND RECOMMENDATIONS FOR FUTURE RESEARCH

This study is subject to several limitations that should be considered when interpreting its findings. First, the study examined *Nume* as a single AI CFO platform, which limits the generalizability of the findings to other emerging AI CFO technologies that may differ in technological architecture, levels of autonomy, data environments, and governance mechanisms. The rapidly evolving nature of artificial intelligence also means that *Nume's* capabilities, regulatory environment, and organizational applications may change over time. Consequently, the findings reflect the technological and institutional conditions prevailing during the study period rather than providing definitive conclusions applicable to all future AI CFO systems. Second, the cross-sectional design limits the ability to establish how trust, accountability, governance, and adoption of AI CFO systems evolve over time. Third, the study concentrated primarily on governance and ethical considerations and did not empirically assess the technical performance or financial outcomes generated by *Nume*. These limitations indicate the need for further empirical investigation across different AI CFO platforms, organizational settings, and regulatory environments.

Future research should therefore adopt longitudinal, multi-platform, and cross-jurisdictional designs to examine how governance, accountability, stakeholder trust, and adoption of AI-powered financial leadership systems develop over time. Comparative studies involving *Nume* and other emerging AI CFO platforms would strengthen theoretical generalizability by determining whether the relationships identified in this study remain consistent across different technological architectures, levels of algorithmic autonomy, organizational contexts, and regulatory regimes. Future studies should also employ multi-method and system-level approaches that integrate stakeholder perceptions with objective evidence from organizational financial systems, including AI-generated forecasts, financial reporting accuracy, decision outcomes, audit trails, cybersecurity incidents, internal control effectiveness, and the extent of human intervention in AI-generated decisions. In addition, researchers should examine organizational digital maturity, AI literacy, board competence, regulatory readiness, and internal control maturity as potential explanatory, mediating, or moderating variables. Such research would provide stronger empirical evidence on the conditions under which AI CFO systems can enhance financial decision-making while preserving fiduciary accountability, professional judgment, stakeholder protection, and ethical governance.

REFERENCES

1. Appelbaum, D., Kogan, A., & Vasarhelyi, M. A. (2017). Big data and analytics in the modern audit engagement: Research needs. *Auditing: A Journal of Practice & Theory*, 36(4), 1–27.
2. Barocas, S., Hardt, M., & Narayanan, A. (2019). *Fairness and machine learning: Limitations and opportunities*. Fairness and Machine Learning.
3. Braun, V., & Clarke, V. (2022). *Thematic analysis: A practical guide*. Sage.
4. Brynjolfsson, E., & McAfee, A. (2017). *Machine, platform, crowd: Harnessing our digital future*. W. W. Norton.
5. Burrell, J. (2016). How the machine “thinks”: Understanding opacity in machine learning algorithms. *Big Data & Society*, 3(1), 1–12.
6. Creswell, J. W., & Plano Clark, V. L. (2018). *Designing and conducting mixed methods research* (3rd ed.). Sage.
7. Davenport, T. H., & Ronanki, R. (2018). Artificial intelligence for the real world. *Harvard Business Review*, 96(1), 108–116.
8. Davis, F. D. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology. *MIS Quarterly*, 13(3), 319–340.
9. Dwivedi, Y. K., Kshetri, N., Hughes, L., Slade, E. L., Jeyaraj, A., Kar, A. K., Baabdullah, A. M., Koohang, A., Raghavan, V., Ahuja, M., Albanna, H., Albashrawi, M. A., Al-Busaidi, A. S., Balakrishnan, J., Barlette, Y., Basu, S., Bose, I., Brooks, L., Buhalis, D., ... Wright, R. (2023).

- Multidisciplinary perspectives on opportunities, challenges and implications of generative conversational AI for research, practice and policy. *International Journal of Information Management*, 71, 102642.
10. European Commission. (2024). *AI Act enters into force*. European Commission.
 11. Floridi, L., Cowls, J., Beltrametti, M., Chila, R., Chazerand, P., Dignum, V., Luetge, C., Madelin, R., Pagallo, U., Rossi, F., Schafer, B., Valcke, P., & Vayena, E. (2018). AI4People—An ethical framework for a good AI society: Opportunities, risks, principles, and recommendations. *Minds and Machines*, 28, 689–707.
 12. Fornell, C., & Larcker, D. F. (1981). Evaluating structural equation models with unobservable variables and measurement error. *Journal of Marketing Research*, 18(1), 39–50.
 13. Freeman, R. E. (1984). *Strategic management: A stakeholder approach*. Pitman.
 14. Hair, J. F., Hult, G. T. M., Ringle, C. M., & Sarstedt, M. (2022). *A primer on partial least squares structural equation modeling (PLS-SEM)* (3rd ed.). Sage.
 15. Huang, M.-H., & Rust, R. T. (2021). A strategic framework for artificial intelligence in marketing. *Journal of the Academy of Marketing Science*, 49, 30–50.
 16. IFAC. (2021). *International ethics standards board for accountants handbook*. International Federation of Accountants.
 17. Issa, H., Sun, T., & Vasarhelyi, M. A. (2016). Research ideas for artificial intelligence in auditing: The formalization of audit and workforce supplementation. *Journal of Emerging Technologies in Accounting*, 13(2), 1–20.
 18. Jensen, M. C., & Meckling, W. H. (1976). Theory of the firm: Managerial behavior, agency costs and ownership structure. *Journal of Financial Economics*, 3(4), 305–360.
 19. Kaplan, A., & Haenlein, M. (2020). Rulers of the world, unite! The challenges and opportunities of artificial intelligence. *Business Horizons*, 63(1), 37–50.
 20. Kline, R. B. (2023). *Principles and practice of structural equation modeling* (5th ed.). Guilford Press.
 21. Kokina, J., & Davenport, T. H. (2020). The emergence of artificial intelligence: How automation is changing auditing. *Journal of Emerging Technologies in Accounting*, 17(1), 115–122.
 22. Mittelstadt, B. D., Allo, P., Taddeo, M., Wachter, S., & Floridi, L. (2016). The ethics of algorithms: Mapping the debate. *Big Data & Society*, 3(2), 1–21.
 23. Nume. (2026a). *The AI CFO for managing your finances*. Nume.
 24. Nume. (2026b). *About Nume: A financial brain for your business*. Nume.
 25. Nume. (2026c). *Security and privacy*. Nume.
 26. OECD. (2021). *Artificial intelligence, data governance and privacy*. OECD Publishing.
 27. OECD. (2024). *OECD AI principles*. Organisation for Economic Co-operation and Development.
 28. Rudin, C. (2019). Stop explaining black box machine learning models for high stakes decisions and use interpretable models instead. *Nature Machine Intelligence*, 1, 206–215.
 29. Saunders, M., Lewis, P., & Thornhill, A. (2019). *Research methods for business students* (8th ed.). Pearson.
 30. Sutton, S. G., Holt, M., & Arnold, V. (2016). “The reports of my death are greatly exaggerated”—Artificial intelligence research in accounting. *International Journal of Accounting Information Systems*, 22, 60–73.
 31. World Economic Forum. (2025). *Artificial intelligence and cybersecurity: Balancing risks and rewards*. World Economic Forum.