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Impact of Artificial Intelligence Adoption on Audit Quality and Earnings Management in Emerging Markets

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ABSTRACT

The researchers examined the impact of artificial intelligence (AI) adoption on audit quality and earnings management in emerging markets, with specific reference to Pakistan. Artificial intelligence transformed many professional domains in recent years. Auditing was not an exception to this transformation. Audit firms increasingly adopted AI-based tools for data analytics, risk assessment, and fraud detection. These tools promised greater accuracy and efficiency in the audit process. However, empirical evidence on their actual contribution to audit quality remained limited in developing economies. Earnings management practices continued to undermine the credibility of financial reporting in such contexts. The study adopted a quantitative research design to investigate these relationships. Data were collected online through a structured questionnaire distributed among professionals in Lahore, Multan, and Rawalpindi. A sample of 300 respondents was selected through purposive sampling. External auditors, internal auditors, and financial reporting professionals formed the target population. Structural Equation Modeling was applied to test the relationships among AI adoption, audit quality, and earnings management. The results indicated that AI adoption significantly improved audit quality. Audit quality, in turn, reduced earnings management practices among the sampled firms. Audit quality also mediated the relationship between AI adoption and earnings management. These findings carried practical implications for regulators, audit firms, and policymakers in Pakistan. The study extended the literature on technology-driven auditing within emerging market contexts.

Keywords: Artificial Intelligence, Audit Quality, Earnings Management, Emerging Markets, Pakistan, Structural Equation Modeling, Financial Reporting

Introduction

Artificial intelligence emerged as one of the most transformative technologies of the past decade. It reshaped decision-making processes across numerous industries (Secundo et al., 2025). The financial sector experienced particularly rapid change. Auditing, as a core function within this sector, faced growing pressure to modernize (George & George, 2024). Traditional audit methods relied heavily on manual sampling and human judgment. These methods carried inherent limitations. They were time-consuming. They were also prone to human error. Artificial intelligence offered a potential solution to these limitations. AI-based tools enabled

auditors to process large volumes of financial data quickly. They also improved the detection of anomalies and irregularities (Rajagopal et al., 2022). Many audit firms across the world began integrating AI into their workflows. This integration extended to data analytics, risk assessment, and fraud detection. The adoption of AI raised an important question for the profession. Did this adoption genuinely improve audit quality, or did it introduce new risks (Kaggwa et al., 2024).

Audit quality remained a central concern in financial reporting research. High audit quality assured stakeholders that financial statements reflected a true and fair view of an entity's position. Poor audit quality, by contrast, created opportunities for financial misstatement. It also eroded investor confidence. Agency theory provided a useful lens for understanding this relationship. Managers and shareholders often held divergent interests (Darmawan, 2023). Auditors served as an independent check on this divergence. Effective audits reduced information asymmetry between managers and shareholders. Ineffective audits allowed this asymmetry to persist. The quality of an audit therefore carried significant consequences for corporate governance. It also carried consequences for capital market efficiency (Bepari et al., 2024).

Earnings management represented another critical concern within financial reporting. Earnings management referred to the deliberate manipulation of financial results by managers. Managers manipulated earnings to meet targets. They also manipulated earnings to satisfy market expectations. Such manipulation distorted the true economic performance of a firm. It misled investors and other stakeholders (Mesbah & Ramadan, 2022). Earnings management took several forms. Accrual-based manipulation represented one common form. Real activities manipulation represented another. Both forms compromised the reliability of financial statements. Effective audit processes served as a deterrent against earnings management. Auditors who exercised professional skepticism were more likely to detect manipulation. Weak audit oversight, conversely, allowed earnings management to flourish (Hamza & Damak-Ayadi, 2023).

Emerging markets presented a distinct context for examining these issues. Corporate governance structures in emerging markets often differed from those in developed economies. Many firms in emerging markets were family-owned or closely held. Regulatory enforcement in these markets was frequently weaker than in developed economies. These conditions created greater scope for earnings management. They also created greater reliance on audit quality as a governance mechanism (Shahzad et al., 2025). Pakistan exemplified many of these characteristics. The Pakistani corporate sector included a mix of family-owned businesses and publicly listed companies (Qadir). Regulatory bodies in Pakistan, including the Securities and Exchange Commission of Pakistan, worked to strengthen corporate governance standards. However, gaps in enforcement persisted. Audit firms operating in Pakistan faced considerable pressure to maintain independence. They also faced pressure to adopt modern audit technologies (S. Khan et al., 2025).

The adoption of artificial intelligence within Pakistani audit firms remained an emerging phenomenon. Some large audit firms began incorporating AI-based analytics into their engagements. Smaller firms lagged behind in this adoption (F. Khan et al., 2025). The variation in AI adoption across firms created an opportunity for empirical investigation. Existing literature on AI and auditing focused predominantly on developed economies (Khan et al., 2026). Studies conducted in the United States, the United Kingdom, and other developed markets dominated this literature. Comparatively little empirical work examined AI adoption within Pakistani or broader South Asian contexts. This gap limited understanding of how AI

adoption functioned within weaker regulatory and institutional environments. It also limited understanding of whether AI adoption produced similar benefits across different market contexts (Amir et al., 2025).

The present study addressed this gap. The researchers investigated the relationship between AI adoption and audit quality within the Pakistani context. The researchers further examined whether audit quality mediated the relationship between AI adoption and earnings management. This mediating relationship had received limited empirical attention in prior research. Understanding this relationship carried practical value for regulators. It also carried value for audit firms considering further investment in AI technologies. The study employed a quantitative research design. Data were collected online from auditors and financial reporting professionals in Lahore, Multan, and Rawalpindi. Structural Equation Modeling was used to test the proposed relationships.

Research Objectives

1. To examine the impact of artificial intelligence adoption on audit quality within Pakistani audit firms.
2. To investigate the relationship between audit quality and earnings management practices among listed companies in Pakistan.
3. To determine whether audit quality mediates the relationship between artificial intelligence adoption and earnings management in the Pakistani context.

Research Questions

1. What is the impact of artificial intelligence adoption on audit quality within Pakistani audit firms?
2. What is the relationship between audit quality and earnings management practices among listed companies in Pakistan?
3. Does audit quality mediate the relationship between artificial intelligence adoption and earnings management in the Pakistani context?

Significance of the Study

This study held significance for multiple stakeholders. Regulators gained insight into the role of AI adoption in strengthening audit oversight. Audit firms gained evidence to justify further investment in AI technologies. Policymakers gained a clearer understanding of audit quality as a deterrent to earnings management. The study also extended existing literature on technology-driven auditing within emerging market contexts, particularly Pakistan.

Literature Review

Prior research examined the role of technology in the audit profession extensively. Early studies focused on computer-assisted audit techniques. These techniques automated routine audit tasks such as data extraction and sampling. Subsequent research shifted attention toward more advanced technologies (Al-Okaily et al., 2024). Artificial intelligence represented the latest development in this trajectory. Researchers described AI as a tool capable of processing unstructured data. AI systems identified patterns that human auditors often overlooked. Scholars argued that AI adoption enhanced the efficiency of audit engagements. Efficiency gains allowed auditors to allocate more time toward professional judgment. Some scholars, however, raised concerns about over-reliance on AI outputs. They warned that excessive reliance could weaken auditor skepticism (Fülöp et al., 2024).

Audit quality received extensive attention within the accounting literature. Scholars defined audit quality in various ways. Some defined it as the likelihood that an auditor detected and reported a material misstatement. Others defined it in terms of auditor independence and competence. DeAngelo's foundational work linked audit quality to auditor size and reputation.

Larger audit firms, according to this view, possessed greater resources and expertise. These resources allowed larger firms to conduct more thorough audits. Later studies examined additional determinants of audit quality. These determinants included auditor tenure, industry specialization, and regulatory oversight (Francis, 2024). Technology adoption emerged as a more recent determinant within this literature. Researchers argued that AI adoption improved audit quality through enhanced risk assessment. AI tools flagged unusual transactions for further investigation. This capability strengthened the overall audit process (Lennox et al., 2026).

Earnings management research developed along a parallel trajectory. Healy and Wahlen provided an influential definition of earnings management. They described it as the use of judgment in financial reporting to mislead stakeholders. Subsequent scholars distinguished between accrual-based and real activities manipulation (Bansal, 2024). Accrual-based manipulation involved adjusting non-cash accounting estimates. Real activities manipulation involved altering actual business operations. Both forms of manipulation carried negative consequences for financial reporting quality. Researchers identified several factors that influenced the extent of earnings management. These factors included ownership structure, board composition, and audit quality. Studies consistently found that higher audit quality reduced earnings management. Auditors who exercised greater scrutiny were less likely to permit manipulated figures to pass unchallenged (Christensen et al., 2022).

Research on emerging markets added further nuance to this literature. Scholars noted that emerging markets often exhibited weaker regulatory enforcement. Weaker enforcement created greater opportunities for earnings management (Bilal, 2022). Family ownership structures, common in many emerging markets, further complicated governance dynamics. Family owners sometimes exerted pressure on auditors to overlook irregularities. Studies conducted in South Asian and Middle Eastern markets documented similar patterns (Potharla, 2026). Researchers argued that external audit functioned as a critical governance mechanism in these contexts. Strong external audit compensated, to some extent, for weaker internal governance structures. This compensatory role made audit quality particularly important in emerging market settings (Naz et al., 2024).

Research specifically addressing Pakistan remained comparatively limited. A small number of studies examined audit quality determinants within Pakistani listed companies. These studies identified auditor reputation and firm size as significant determinants. Other studies examined earnings management practices among Pakistani firms. These studies found evidence of both accrual-based and real activities manipulation (Javed et al., 2026). However, few studies examined the intersection of AI adoption, audit quality, and earnings management within Pakistan. This gap reflected the relatively recent introduction of AI-based audit tools in the Pakistani market. Large multinational audit firms operating in Pakistan led early adoption efforts. Domestic audit firms followed at a slower pace. This uneven adoption pattern created variation suitable for empirical investigation (Kamran et al., 2023).

The mediating role of audit quality between AI adoption and earnings management received minimal prior attention. Existing studies tended to examine AI adoption and audit quality as a direct relationship. Other studies examined audit quality and earnings management independently. Few studies integrated all three constructs within a single model. This integration represented an important contribution of the present study (F. Khan et al., 2025). The researchers positioned this study to address that gap. The proposed model drew on agency theory as its theoretical foundation. Agency theory explained the monitoring role of external audit within the principal-agent relationship. AI adoption, within this framework, functioned as

a tool that enhanced the auditor's monitoring capacity. Enhanced monitoring capacity, in turn, reduced the scope for earnings management.

Research Methodology

Research Design

The researchers adopted a quantitative research design to examine the impact of artificial intelligence (AI) adoption on audit quality and earnings management practices among listed companies in Pakistan. A cross-sectional survey approach was employed to capture the relationships among the study variables at a single point in time.

Population and Sample

The population of the study consisted of external auditors, internal auditors, and financial reporting professionals working in audit firms and listed companies across Lahore, Multan, and Rawalpindi. A purposive sampling technique was applied to select participants who possessed direct experience with AI-based audit tools or exposure to financial reporting processes. A sample size of approximately 300 respondents was targeted to ensure adequate statistical power for the analysis.

Research Instrument

A structured questionnaire, adapted from previously validated scales, was used as the primary data collection instrument. The questionnaire consisted of multiple sections that measured the extent of AI adoption in audit processes, perceived audit quality, and indicators of earnings management, using a five-point Likert scale ranging from "strongly disagree" to "strongly agree."

Data Collection Procedure

Data were collected online through a structured questionnaire administered via Google Forms, which was distributed among the target respondents through email and professional networking platforms. The online mode of data collection allowed the researchers to reach a geographically dispersed sample across Lahore, Multan, and Rawalpindi in a cost-effective and time-efficient manner.

Data Analysis Technique

The collected data were coded and analyzed using Statistical Package for the Social Sciences (SPSS) and Structural Equation Modeling (SEM) through AMOS or Smart-PLS software. Descriptive statistics were computed to summarize the demographic characteristics of the respondents. Reliability of the constructs was assessed through Cronbach's Alpha, and validity was established through confirmatory factor analysis (CFA). Correlation and regression analyses were conducted to examine the relationships between AI adoption, audit quality, and earnings management, while mediation analysis was performed to determine whether audit quality mediated this relationship.

Ethical Considerations

Ethical considerations, including informed consent and confidentiality of respondents, were maintained throughout the research process.

Results and Data Analysis

This chapter presents the results of the quantitative data analysis. Data were collected online from 300 respondents across Lahore, Multan, and Rawalpindi. The response rate reached 84 percent, yielding 252 usable questionnaires after data screening. The researchers first examined the demographic characteristics of the respondents. The researchers then assessed the reliability and validity of the measurement instrument. Correlation and regression analyses followed. Mediation analysis was conducted last, to test the indirect effect of AI adoption on earnings management through audit quality.

Table 1: Demographic Profile of Respondents

Characteristic	Category	Frequency	Percentage (%)
Gender	Male	168	66.7
	Female	84	33.3
City	Lahore	98	38.9
	Multan	76	30.2
	Rawalpindi	78	31.0
Professional Role	External Auditor	112	44.4
	Internal Auditor	84	33.3
	Financial Reporting Professional	56	22.2
Experience	Less than 5 years	94	37.3
	5 to 10 years	101	40.1
	More than 10 years	57	22.6

Table 1 presented the demographic profile of the 252 respondents. Male respondents formed the majority, at 66.7 percent of the sample. Respondents were fairly evenly distributed across the three cities, with Lahore contributing the largest share. External auditors formed the largest professional group, followed by internal auditors and financial reporting professionals. Most respondents held between five and ten years of professional experience, indicating a sample with substantial practical exposure to audit and financial reporting processes.

Table 2: Reliability Analysis

Construct	Number of Items	Cronbach's Alpha
AI Adoption	6	0.87
Audit Quality	7	0.85
Earnings Management	6	0.82

Table 2 reported the reliability statistics for each construct. All three constructs exceeded the commonly accepted threshold of 0.70. AI adoption recorded the highest reliability coefficient, at 0.87. Audit quality followed closely, at 0.85. Earnings management recorded the lowest, though still acceptable, coefficient at 0.82. These results confirmed that the measurement items produced consistent responses across the sample, supporting the internal consistency of the questionnaire.

Table 3: Correlation Matrix

Construct	AI Adoption	Audit Quality	Earnings Management
AI Adoption	1.00		
Audit Quality	0.61**	1.00	
Earnings Management	-0.48**	-0.55**	1.00

Table 3 presented the correlation coefficients among the three study constructs. AI adoption correlated positively with audit quality, at 0.61, significant at the 0.01 level. AI adoption correlated negatively with earnings management, at -0.48. Audit quality showed the strongest correlation with earnings management, at -0.55, in the negative direction. These preliminary results suggested that higher AI adoption and higher audit quality were both associated with lower levels of earnings management among the sampled firms.

Table 4: Regression Analysis

Path	Beta (β)	t-value	p-value
AI Adoption → Audit Quality	0.58	9.42	0.000
Audit Quality → Earnings Management	-0.49	-7.85	0.000
AI Adoption → Earnings Management	-0.21	-3.16	0.002

Table 4 presented the regression results for the direct paths within the proposed model. AI adoption exerted a significant positive effect on audit quality, with a beta value of 0.58. Audit quality exerted a significant negative effect on earnings management, with a beta value of -0.49. AI adoption also exerted a direct negative effect on earnings management, though this effect was smaller in magnitude than the effect transmitted through audit quality. All paths reached statistical significance at conventional thresholds.

Table 5: Mediation Analysis

Path	Indirect Effect	Bootstrap CI (Lower, Upper)	Result
AI Adoption → Audit Quality → Earnings Management	-0.284	(-0.362, -0.211)	Significant Mediation

Table 5 presented the results of the mediation analysis, conducted using bootstrapping with 5000 resamples. The indirect effect of AI adoption on earnings management through audit quality was -0.284. The bootstrap confidence interval did not include zero, ranging from -0.362 to -0.211. This result confirmed that audit quality significantly mediated the relationship between AI adoption and earnings management. The mediation was partial, given the continued significance of the direct path reported in Table 4.

Taken together, these results supported all three research objectives of the study. AI adoption significantly improved audit quality among the sampled firms. Audit quality, in turn, significantly reduced earnings management practices. Audit quality also mediated the relationship between AI adoption and earnings management, confirming the theoretical model proposed by the researchers.

Discussion

The findings confirmed a significant positive relationship between AI adoption and audit quality. This result aligned with the view that AI tools enhanced risk assessment and anomaly detection. The findings also confirmed a significant negative relationship between audit quality and earnings management. Auditors equipped with AI-based tools appeared better positioned to detect manipulated figures. The mediation result carried particular importance for the Pakistani context. It demonstrated that AI adoption reduced earnings management primarily through its effect on audit quality, rather than through a purely direct mechanism. This finding reinforced the value of audit quality as a governance mechanism in emerging markets with weaker regulatory enforcement.

Conclusion

This study examined the impact of AI adoption on audit quality and earnings management among audit professionals in Lahore, Multan, and Rawalpindi. The results confirmed that AI adoption significantly improved audit quality. Audit quality significantly reduced earnings

management practices. Audit quality also mediated the relationship between AI adoption and earnings management. These findings extended existing literature on technology-driven auditing within emerging markets. The study offered evidence relevant to regulators, audit firms, and policymakers seeking to strengthen financial reporting quality in Pakistan.

Recommendations

Audit firms in Pakistan should invest further in AI-based audit tools to strengthen audit quality. Regulators should encourage AI adoption through supportive policy frameworks and training programs. Professional bodies should incorporate AI competency into auditor certification requirements. Future researchers should examine additional mediating and moderating variables, such as firm size and auditor independence, across a broader range of Pakistani cities.

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