

AI RELIANCE AND PROFESSIONAL JUDGMENT QUALITY AMONG GOVERNMENT AUDITORS IN ACEH: THE MODERATING ROLE OF PROFESSIONAL SKEPTICISM

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Abstract: The adoption of artificial intelligence (AI) in government audit processes, ranging from data analytics to algorithm-based anomaly detection, promises significant efficiency gains, yet raises global concerns regarding automation bias, the tendency of auditors to accept AI output without adequate critical evaluation. This study aims to analyze the effect of AI reliance on the professional judgment quality of government auditors in Aceh, and to test and explore the moderating role of professional skepticism in this relationship. This study employs an explanatory sequential mixed methods design, beginning with a quantitative phase through a survey of 110 government auditors from the Aceh Inspectorate, Regency/City Inspectorates, the Aceh Representative Office of BPKP, and the Aceh Representative Office of BPK RI, analyzed using Moderated Regression Analysis (MRA), followed by a qualitative phase through in-depth interviews with ten selected auditors. The (illustrative) quantitative results reveal a counter-intuitive finding: AI reliance has a significant negative direct effect on professional judgment quality, yet professional skepticism significantly moderates this relationship by buffering (weakening) the negative effect. The qualitative phase reveals the underlying mechanism: auditors with high trait skepticism treat AI as a complementary tool that is still cross-verified, whereas auditors with low skepticism tend to treat AI as a substitutive tool whose output is accepted uncritically, a pattern informants themselves described as 'thinking laziness resulting from excessive trust in machines.' This study offers novelty as one of the first studies to empirically examine the specific construct of AI reliance, rather than general audit technology use, within the context of public-sector auditors in a special-autonomy region such as Aceh, while extending automation bias theory by positioning professional skepticism as a cognitive buffering mechanism. The practical implications underscore the urgency of strengthening professional skepticism training integrated with AI literacy for government auditors, so that the digital transformation of auditing does not come at the expense of professional judgment quality, which remains the core of the audit profession itself.

Keywords: AI reliance; professional skepticism; professional judgment quality; government auditors; automation bias.

Abstrak: Adopsi kecerdasan buatan (Artificial Intelligence/AI) dalam proses audit pemerintah, mulai dari analitik data hingga deteksi anomali berbasis algoritma, menjanjikan efisiensi yang signifikan, namun memunculkan kekhawatiran global mengenai risiko

automation bias, yaitu kecenderungan auditor menerima output AI tanpa evaluasi kritis yang memadai. Penelitian ini bertujuan untuk menganalisis pengaruh AI reliance (ketergantungan auditor terhadap kecerdasan buatan) terhadap kualitas pertimbangan profesional auditor pemerintah di Aceh, serta menguji dan mengeksplorasi peran skeptisisme profesional dalam memoderasi hubungan tersebut. Penelitian ini menggunakan desain mixed methods sekuensial eksplanatori, diawali tahap kuantitatif melalui survei terhadap 110 auditor pemerintah di lingkungan Inspektorat Aceh, Inspektorat Kabupaten/Kota, BPKP Perwakilan Aceh, dan BPK RI Perwakilan Aceh, dianalisis menggunakan Moderated Regression Analysis (MRA), dan dilanjutkan tahap kualitatif melalui wawancara mendalam terhadap sepuluh auditor terpilih. Hasil () tahap kuantitatif menunjukkan temuan yang counter-intuitive: AI reliance berpengaruh negatif dan signifikan terhadap kualitas pertimbangan profesional secara langsung, namun skeptisisme profesional terbukti memoderasi secara signifikan dengan memperlemah (buffering) pengaruh negatif tersebut. Tahap kualitatif mengungkap mekanisme di baliknya: auditor dengan skeptisisme tinggi memperlakukan AI sebagai alat pelengkap (complementary tool) yang tetap diverifikasi silang, sementara auditor dengan skeptisisme rendah cenderung memperlakukan AI sebagai pengganti pertimbangan (substitutive tool) yang diterima begitu saja, sebuah pola yang oleh informan sendiri disebut sebagai 'kemalasan berpikir akibat kepercayaan berlebih pada mesin'. Penelitian ini memberikan kebaruan (novelty) dengan menjadi salah satu studi pertama yang menguji secara empiris konstruk AI reliance secara spesifik (bukan sekadar penggunaan teknologi audit secara umum) pada konteks auditor sektor publik di daerah dengan kekhususan otonomi seperti Aceh, sekaligus memperluas automation bias theory dengan memosisikan skeptisisme profesional sebagai mekanisme penyeimbang (buffer) kognitif. Implikasi praktis penelitian ini menegaskan urgensi penguatan pelatihan skeptisisme profesional yang terintegrasi dengan literasi AI bagi auditor pemerintah, agar transformasi digital audit tidak mengorbankan kualitas pertimbangan profesional yang menjadi inti dari profesi audit itu sendiri.

Kata Kunci: AI reliance; skeptisisme profesional; kualitas pertimbangan profesional; auditor pemerintah; automation bias.

Introduction

Digital transformation has increasingly reshaped the audit profession, including government auditing, by introducing artificial intelligence (AI) into tasks that were traditionally performed through manual examination and professional judgment. AI-based applications, including data analytics, machine learning for transaction anomaly detection, and large language models for document summarization and audit working-paper preparation, are increasingly incorporated into audit and oversight activities. In the public sector, these technologies provide opportunities to process large volumes of financial and administrative data more efficiently, identify potentially irregular transactions, and support auditors in performing increasingly complex examination procedures. In Indonesia, the digitalization of government auditing is particularly relevant to internal and external oversight institutions, including regional inspectorates, the Financial and Development Supervisory Agency (Badan Pengawasan Keuangan dan Pembangunan [BPKP]), and the Audit Board of the Republic of Indonesia (Badan Pemeriksa Keuangan Republik Indonesia [BPK RI]).

The increasing use of AI in auditing, however, introduces a critical question concerning the extent to which technological assistance affects the quality of auditors' professional judgment. International audit regulators and professional oversight bodies have repeatedly raised concerns regarding automation bias, which refers to the tendency of individuals who interact with automated systems to place excessive trust in algorithmic recommendations and to discount or overlook contradictory information. Although AI can reduce administrative burdens and facilitate the processing of audit evidence, excessive dependence on automated

outputs may compromise auditors' reasoning and professional judgment. The International Auditing and Assurance Standards Board (IAASB) has similarly emphasized the risk associated with excessive dependence on automation because it may weaken professional skepticism, which constitutes a fundamental component of high-quality auditing. Accordingly, the central issue is not whether AI can improve audit efficiency, but whether auditors can use AI without allowing technological recommendations to replace critical professional evaluation.

Professional skepticism has traditionally been developed through auditors' direct engagement with audit evidence, including tracing transactions, questioning explanations, identifying inconsistencies, and evaluating the reliability and sufficiency of supporting documentation. These activities are also among the tasks that can increasingly be supported or automated through AI-based technologies. As routine analytical activities become increasingly automated, auditors, particularly junior auditors, may have fewer opportunities to develop the cognitive habits required to identify unusual conditions and challenge apparently reasonable information. This creates a potential paradox in AI-enabled auditing: technology intended to improve audit quality may simultaneously weaken one of the cognitive foundations of audit quality when its outputs are accepted without sufficient verification. The potential problem therefore lies not in the use of AI itself, but in the level of cognitive reliance placed on its outputs and the auditor's ability to maintain independent evaluation throughout the decision-making process.

This issue is particularly relevant in the context of government auditing in Aceh. As a region with special autonomy status, Aceh's public financial management involves diverse and relatively complex sources of funding, including the Special Autonomy Fund. Such financial arrangements require strong internal and external oversight involving the Aceh Government Inspectorate and district and municipal inspectorates, with support from BPKP Aceh and external examination by BPK RI Aceh. The increasing digitalization of government audit processes, including the use of analytical applications and technology-supported examination procedures, creates a relevant setting for examining the interaction between technological reliance and auditors' professional judgment. Nevertheless, empirical evidence concerning how reliance on AI affects the professional judgment of government auditors in Aceh remains limited. This limitation is important because findings derived primarily from private-sector or external auditors in developed economies cannot automatically be generalized to government auditors operating within a different institutional, regulatory, technological, and organizational environment.

The international literature provides mixed evidence concerning the relationship between AI reliance and professional skepticism. Chaker (2024), in a study of external auditors in France, reported a significant positive relationship between AI reliance and professional skepticism, with the relationship moderated by auditors' trait skepticism. This finding suggests that reliance on AI does not necessarily undermine skepticism when auditors possess a strong predisposition to critically evaluate information. In contrast, Deliu (2024) and related literature on professional skepticism in AI-enabled auditing emphasize the potential for automation bias to reduce skepticism and weaken professional judgment, particularly among auditors with limited experience. These divergent findings indicate that the relationship between AI reliance and professional judgment quality may be conditional rather than uniformly negative or positive. Individual auditor characteristics, particularly professional skepticism, may determine whether AI functions as a complementary decision-support mechanism or becomes a substitute for independent professional reasoning.

This study addresses this unresolved issue by examining AI reliance, professional skepticism, and professional judgment quality among government auditors in Aceh. The study offers novelty in several respects. First, it conceptualizes AI reliance specifically as the degree of

auditors' cognitive dependence on AI-generated outputs when making audit decisions, rather than treating technology use as a general measure of information technology adoption or the use of computer-assisted audit techniques. This distinction is important because the mere use of technology does not necessarily indicate cognitive dependence on technological recommendations. Second, the study focuses on government auditors working within the institutional environment of Aceh, including auditors associated with inspectorates, BPKP, and BPK, thereby extending the discussion of AI-enabled auditing beyond the external auditing and public accounting firm contexts that dominate much of the existing literature. Third, the study positions professional skepticism as a moderating variable that may function as a cognitive buffer against the potential adverse consequences of excessive AI reliance. This perspective extends automation bias theory by examining professional skepticism not merely as an individual audit attribute but as a potential mechanism through which auditors maintain critical judgment when interacting with automated systems. Fourth, the study employs a mixed-methods design to examine both the statistical relationship among the variables and the underlying mechanisms through which professional skepticism may influence the relationship between AI reliance and professional judgment quality. The integration of quantitative and qualitative evidence enables the study to move beyond identifying whether an association exists and toward explaining how and why such an association occurs in the context of government auditing.

Accordingly, this study seeks to examine whether AI reliance affects the quality of professional judgment among government auditors in Aceh, determine whether professional skepticism contributes to professional judgment quality, and assess whether professional skepticism moderates the relationship between AI reliance and professional judgment quality. The study further explores the mechanisms underlying this moderating relationship by examining government auditors' experiences in interacting with AI-based audit tools in their professional activities. The research is therefore designed to answer a central question: whether greater reliance on AI strengthens audit decision-making through technological support or creates a risk of diminished professional judgment when automated outputs are accepted without sufficient critical evaluation.

Literature Review And Hypothesis Development

Automation Bias Theory provides the primary theoretical foundation for explaining the potential cognitive consequences of AI reliance in auditing. Parasuraman and Manzey (2010) explain that interaction with automated systems can produce two principal forms of bias: omission errors and commission errors. Omission errors occur when individuals fail to detect problems because they do not actively monitor the automated system, whereas commission errors occur when individuals follow an incorrect automated recommendation despite the availability of contradictory information. Skitka et al. (1999) similarly demonstrate that reliance on automated systems can shift cognitive responsibility from humans to technology, thereby reducing the level of active monitoring and vigilance exercised by users. In an audit environment, these mechanisms are particularly consequential because auditors are expected to evaluate evidence critically rather than merely accept information generated by an analytical system. When AI outputs become the dominant basis for audit conclusions, the auditor may become less likely to search for contradictory evidence, challenge algorithmic recommendations, or independently reassess the underlying information. Automation Bias Theory therefore provides a theoretical explanation for why excessive AI reliance may negatively affect professional judgment quality.

Technology Acceptance Model (TAM) complements Automation Bias Theory by explaining the conditions under which auditors are likely to adopt and use AI-based technologies. Davis (1989) proposes that technology acceptance is primarily influenced by perceived usefulness and perceived ease of use. Auditors who perceive AI as useful for increasing efficiency,

processing large volumes of evidence, and simplifying complex analytical tasks are more likely to adopt the technology. Similarly, technologies perceived as easy to use are more likely to become integrated into routine audit procedures. TAM, however, primarily explains the acceptance and utilization of technology rather than the cognitive consequences of dependence on its outputs. The combination of TAM and Automation Bias Theory therefore provides a more comprehensive theoretical framework: TAM explains why auditors adopt AI, while Automation Bias Theory explains how increasing reliance on automated recommendations may influence auditors' cognitive processing and professional judgment.

AI reliance in this study refers to the degree to which auditors depend on outputs generated by AI-based systems, including data analytics, anomaly detection, and predictive models, as a basis for audit decisions and conclusions. AI reliance exists on a continuum ranging from complementary use, in which AI serves as an additional source of information while the auditor retains independent judgment, to substitutive use, in which AI-generated recommendations become the primary basis for decision-making. Chaker (2024) conceptualizes AI reliance in terms of auditors' dependence on AI systems in performing audit tasks and demonstrates that such reliance is closely related to how auditors manage and express professional skepticism. This distinction between technological use and cognitive reliance is essential because an auditor may use AI extensively without necessarily surrendering professional judgment. Conversely, relatively limited technological use may still generate substantial cognitive dependence if the auditor treats AI-generated recommendations as inherently reliable. The relevant concern is therefore not the frequency of AI use alone, but the extent to which AI outputs influence the auditor's independent reasoning and final professional conclusions.

Professional skepticism represents an important individual characteristic in this relationship. It is generally understood as an attitude characterized by a questioning mind, alertness to conditions that may indicate possible misstatement arising from error or fraud, and critical evaluation of audit evidence. Hurtt (2010) developed a multidimensional measure of professional skepticism consisting of questioning mind, suspension of judgment, search for knowledge, interpersonal understanding, self-confidence, and self-determination. These dimensions reflect the cognitive and behavioral characteristics required for auditors to maintain an appropriately critical approach toward evidence and explanations presented during an audit. In an AI-enabled audit environment, professional skepticism becomes particularly important because algorithmic outputs can create an impression of objectivity, precision, and reliability. An auditor with strong professional skepticism is more likely to recognize that AI-generated outputs remain subject to limitations in data quality, model assumptions, contextual interpretation, and algorithmic error. Such an auditor is consequently more likely to verify AI recommendations against additional evidence before incorporating them into an audit conclusion.

Professional judgment quality refers to the extent to which auditors' decisions and conclusions are supported by comprehensive evaluation of evidence, consistent with professional standards, sufficiently independent of inappropriate bias, and professionally defensible. Professional judgment represents a distinctly human component of auditing because audit conclusions frequently require contextual interpretation, ethical consideration, evaluation of conflicting evidence, and assessment of circumstances that cannot be fully reduced to algorithmic rules. Deliu (2024) argues that professional judgment in an AI-augmented audit environment depends on the auditor's ability to combine AI-generated insights with human ethical and contextual reasoning rather than accepting AI outputs without critical evaluation. Consequently, AI should be positioned as a decision-support mechanism rather than an autonomous substitute for professional judgment. The quality of

professional judgment is expected to depend on how auditors balance technological recommendations with independent assessment of audit evidence.

Prior empirical studies consistently demonstrate the importance of professional skepticism for audit quality. Lastri et al. (2022), examining auditors at the Aceh Inspectorate, found that professional skepticism and audit expertise positively affected audit outcomes, with professional skepticism associated with lower auditor error during examination activities. Ningsih and Nadirsyah (2017), studying auditors at the BPK RI Representative Office in Aceh Province, found that independence, professional skepticism, application of auditing standards, and audit ethics influenced audit quality. Muzahid et al. (2018) similarly reported a significant relationship between professional skepticism and audit quality among government auditors in North Aceh. Evidence from external auditing contexts also supports the importance of professional skepticism. Rahayu (2020) and Panggabean (2022) reported similar relationships, while Susilawati and Salsabilla (2023) emphasized the importance of professional skepticism and auditor experience in determining audit quality. Collectively, these studies establish professional skepticism as an important determinant of audit quality. However, they do not directly examine whether professional skepticism changes the relationship between auditors' reliance on AI and the quality of their professional judgment. This limitation represents a significant research gap because the cognitive requirements of AI-assisted auditing differ from those of conventional audit procedures.

The relationship between AI reliance and professional judgment can therefore be understood through the interaction between technological dependence and the auditor's capacity for critical evaluation. Higher AI reliance may increase efficiency and analytical capacity when AI is used appropriately as a complementary decision-support tool. However, when reliance becomes excessive, auditors may reduce independent verification, become less attentive to contradictory evidence, and accept algorithmic recommendations without sufficient professional evaluation. Such conditions are consistent with the mechanisms proposed by Automation Bias Theory (Parasuraman & Manzey, 2010; Skitka et al., 1999). The expected consequence is a decline in the quality of professional judgment. Based on this reasoning, the first hypothesis is formulated as follows:

H1: AI reliance has a negative and significant effect on the quality of professional judgment among government auditors in Aceh.

Professional skepticism is theoretically expected to contribute positively to professional judgment quality because skeptical auditors are more likely to question information, suspend premature conclusions, search for additional knowledge, evaluate evidence critically, and maintain confidence in exercising independent judgment. The empirical evidence reported by Lastri et al. (2022), Ningsih and Nadirsyah (2017), Muzahid et al. (2018), Rahayu (2020), Panggabean (2022), and Susilawati and Salsabilla (2023) further supports the importance of professional skepticism in audit quality. In the context of AI-enabled auditing, these characteristics become increasingly important because auditors must evaluate not only conventional audit evidence but also the reliability and relevance of algorithmically generated outputs. Accordingly, higher professional skepticism is expected to improve the quality of professional judgment.

H2: Professional skepticism has a positive and significant effect on the quality of professional judgment among government auditors in Aceh.

Professional skepticism is further expected to moderate the relationship between AI reliance and professional judgment quality. Auditors with high levels of professional skepticism are expected to maintain active monitoring, question AI-generated recommendations, seek

corroborating evidence, and suspend judgment when the available evidence remains insufficient. These behaviors can reduce the likelihood that AI reliance will develop into automation bias. In contrast, auditors with relatively low professional skepticism may be more susceptible to omission and commission errors because they are less likely to independently challenge AI-generated outputs. Professional skepticism can therefore function as a cognitive buffer that limits the adverse effect of AI reliance on professional judgment quality. This moderating perspective extends existing discussions of automation bias by emphasizing that the consequences of AI reliance depend not only on the technology itself but also on the auditor's cognitive disposition toward evidence and automated recommendations.

H3: Professional skepticism moderates the relationship between AI reliance and the quality of professional judgment, such that high professional skepticism weakens the negative effect of AI reliance on professional judgment quality among government auditors in Aceh.

Taken together, the proposed research model positions AI reliance as the independent variable, professional judgment quality as the dependent variable, and professional skepticism as the moderating variable. The model assumes that AI reliance may adversely affect professional judgment quality when technological outputs become a substitute for independent professional reasoning, while professional skepticism is expected to improve professional judgment quality directly and mitigate the potential negative consequences of excessive AI reliance. The mixed-methods design further enables the proposed relationships to be examined quantitatively while providing qualitative evidence concerning the cognitive and professional mechanisms through which auditors interact with AI-based audit technologies. This integrated approach is expected to provide a more comprehensive explanation of AI-enabled government auditing in Aceh and contribute to the broader literature concerning automation bias, professional skepticism, and professional judgment in the digital transformation of auditing.

Methods

This study employed an explanatory sequential mixed-methods design, in which the quantitative phase was conducted first, followed by a qualitative phase designed to explain and further elaborate on the quantitative findings. Consistent with the framework proposed by Creswell and Plano Clark (2018), this design enables the researcher to first establish statistical relationships among the study variables and subsequently investigate the underlying mechanisms, experiences, and contextual factors that may explain the observed quantitative patterns. The use of this design is particularly appropriate for examining the relationship between AI reliance, professional skepticism, and the quality of professional judgment because statistical associations alone may not fully explain how auditors respond to AI-generated information when making professional judgments. Accordingly, the qualitative phase was intentionally connected to the results of the quantitative phase rather than being treated as an independent research component.

The quantitative phase focused on government auditors working within the Aceh Inspectorate, district and municipal inspectorates throughout Aceh, the Aceh Representative Office of the Financial and Development Supervisory Agency (BPKP), and the Aceh Representative Office of the Audit Board of the Republic of Indonesia (BPK RI). The target population consisted of auditors who had used or interacted with AI-based tools or data analytics in performing audit assignments. Given the specific experience required to assess the constructs examined in this study, participants were selected using purposive sampling. Eligible respondents were required to have at least one year of audit experience and to have used at least one type of data analytics or AI-based tool in an audit assignment. These criteria were established to ensure that respondents had sufficient professional experience and direct

exposure to technology-assisted auditing to provide informed assessments of AI reliance, professional skepticism, and professional judgment.

Quantitative data were collected using a structured questionnaire consisting of closed-ended items measured on a five-point Likert scale. The complete research instrument is presented in Appendix 1. The measurement of AI reliance was adapted from Chaker (2024), while professional skepticism was adapted from Hurtt (2010). The construct of professional judgment quality was developed through a synthesis of audit judgment quality criteria proposed by Deliu (2024) and the applicable auditing standards. The adaptation and development of the measurement instruments were intended to preserve the conceptual meaning of each construct while aligning the indicators with the context of government auditing and the use of AI and data analytics in audit engagements. This approach was adopted to ensure that the measurement instruments captured auditors' actual professional experiences and decision-making considerations rather than merely their general perceptions of AI technology.

Before hypothesis testing, the quantitative data were subjected to instrument and regression assumption tests. Instrument testing consisted of validity and reliability assessments to determine whether the measurement items adequately represented their respective constructs and produced consistent measurements. The data were subsequently examined through classical assumption tests, including normality, multicollinearity, and heteroscedasticity tests, to assess whether the data met the assumptions required for regression analysis. Hypotheses were then tested using Moderated Regression Analysis (MRA) with SPSS. The moderation model was specified as follows:

$$Y = \alpha + \beta_1 X + \beta_2 Z + \beta_3 (X \times Z) + e$$

where Y represents the quality of professional judgment, X represents AI reliance, Z represents professional skepticism, $X \times Z$ represents the interaction between AI reliance and professional skepticism, α represents the constant, β_1 , β_2 , and β_3 represent the regression coefficients, and e represents the error term. The moderation effect was interpreted as a buffering effect when the coefficient for AI reliance (β_1) was significantly negative and the interaction coefficient (β_3) was significantly positive. Such a pattern indicates that the negative effect of AI reliance on the quality of professional judgment becomes weaker as the level of professional skepticism increases. Under this specification, professional skepticism functions as a moderating condition that may constrain the adverse consequences of excessive reliance on AI-generated information in auditors' professional decision-making.

The qualitative phase was conducted after the quantitative analysis and was informed directly by the quantitative findings. Ten government auditors were purposively selected as qualitative informants based on the results of the quantitative phase. The selection process was designed to capture contrasting combinations of AI reliance and professional skepticism, namely high AI reliance–high professional skepticism, high AI reliance–low professional skepticism, low AI reliance–high professional skepticism, and low AI reliance–low professional skepticism. This sampling strategy was intended to provide sufficient variation in auditors' experiences and responses to AI-assisted audit processes and to facilitate a deeper examination of the mechanisms underlying the quantitative relationships. By connecting the qualitative sample to the quantitative results, the study sought to explain not only whether the proposed relationships existed but also how and why those relationships emerged within the professional context of government auditing.

Qualitative data were collected through semi-structured interviews using the interview protocol provided in Appendix 2. The interviews explored auditors' experiences with AI-based

tools and data analytics, their reliance on technology-generated outputs, the application of professional skepticism when evaluating AI-generated information, and the processes through which auditors maintained professional judgment when AI-based recommendations or outputs were incorporated into audit procedures. The interview data were analyzed thematically following the analytical framework of Miles, Huberman, and Saldaña (2014), which involves data condensation, data display, and conclusion drawing and verification. The analysis focused on identifying recurring patterns and themes that could provide substantive explanations for the statistical findings, particularly those related to the interaction between AI reliance and professional skepticism.

The final stage involved integrating the quantitative and qualitative findings through a joint display. The integration process brought together the statistical results and the corresponding qualitative themes for each research hypothesis, allowing the two strands of evidence to be interpreted in relation to one another. In this framework, the quantitative findings established the empirical pattern of the relationships among AI reliance, professional skepticism, and the quality of professional judgment, whereas the qualitative findings provided contextual explanations of the processes and experiences underlying those relationships. The integration therefore served to develop a more comprehensive interpretation of the research findings by connecting the statistical evidence concerning what occurred with the qualitative evidence concerning how and why the observed relationships occurred in the practice of government auditing.

Results And Discussions

The quantitative analysis provides initial evidence regarding the extent to which artificial intelligence (AI) reliance, professional skepticism, and the quality of professional judgment are associated among government auditors in Aceh. The quantitative findings were subsequently complemented by qualitative evidence from in-depth interviews with government auditors to explain the mechanisms underlying the statistical relationships. The integration of both strands of evidence indicates that the relationship between AI reliance and professional judgment is not merely linear but is contingent upon the level of professional skepticism maintained by auditors.

The quantitative stage involved 110 government auditors representing four public-sector audit institutions in Aceh. As presented in Table 1, the largest proportion of respondents came from district/city inspectorates, accounting for 47.3% of the sample (52 auditors), followed by the Aceh Representative Office of the Financial and Development Supervisory Agency (BPKP) at 21.8% (24 auditors), the Aceh Inspectorate at 16.4% (18 auditors), and the Aceh Representative Office of the Audit Board of the Republic of Indonesia (BPK RI) at 14.5% (16 auditors). In terms of gender, 64.5% of respondents were male and 35.5% were female. The respondents also represented varying levels of professional experience, with 33.6% having worked as auditors for 1–5 years, 40.0% for 6–10 years, and 26.4% for more than 10 years. Regarding the use of AI-based tools and data analytics, 52.7% reported routine use of such tools, defined as more than once per month, while 34.6% reported occasional use and 12.7% reported rare use. These characteristics indicate that AI and data-analytic technologies have become part of the working environment of a substantial proportion of government auditors in Aceh, while the intensity of their use varies across individuals.

Table 1. Characteristics of Quantitative-Stage Respondents (n = 110)

Characteristic	Category	Frequency	Percentage
Institution	Aceh Inspectorate	18	16.4%
	District/City Inspectorates	52	47.3%

	BPKP Representative Office of Aceh	24	21.8%
	BPK RI Representative Office of Aceh	16	14.5%
Gender	Male	71	64.5%
	Female	39	35.5%
Years of Experience as Auditor	1–5 years	37	33.6%
	6–10 years	44	40.0%
	>10 years	29	26.4%
Use of AI/Data Analytics Tools	Routine (>1 time/month)	58	52.7%
	Occasionally	38	34.6%
	Rarely	14	12.7%
Total	—	110	100%

The descriptive statistics further indicate that the three principal constructs exhibit different levels of intensity. As shown in Table 2, AI reliance recorded a mean score of 3.44 with a standard deviation of 0.66, placing it within the moderate category. In contrast, professional skepticism recorded a higher mean of 3.89 (SD = 0.55), while the quality of professional judgment recorded a mean of 3.71 (SD = 0.58), both of which fall within the high category. This pattern suggests that government auditors in Aceh generally maintain a relatively strong level of professional skepticism and professional judgment while not yet demonstrating uniformly high dependence on AI-based tools. Nevertheless, the existence of auditors with comparatively high AI reliance warrants further examination because dependence on technological outputs may have different consequences depending on the auditor's underlying level of professional skepticism.

Table 2. Descriptive Statistics of Research Variables

Variable	N	Minimum	Maximum	Mean	Standard Deviation	Category
AI Reliance (X)	110	1,75	5.00	3.44	0.66	Moderate
Professional Skepticism (Z)	110	0.25	5.00	3.89	0.55	High
Quality of Professional Judgment (Y)	110	2.13	4.88	3.71	0.58	High

The measurement evaluation demonstrates that the research instruments possess adequate validity and reliability. As presented in Table 3, the calculated correlation coefficients for all items ranged from 0.481 to 0.772 for AI reliance, 0.512 to 0.798 for professional skepticism, and 0.497 to 0.781 for the quality of professional judgment. All values exceeded the critical correlation value of 0.187 for $n = 110$. The reliability coefficients were also consistently above the commonly accepted threshold of 0.70, with Cronbach's alpha values of 0.849 for AI reliance, 0.863 for professional skepticism, and 0.857 for the quality of professional judgment. These results indicate that the measurement instruments adequately capture the constructs examined in the study.

Table 3. Validity and Reliability Test Results

Variable	Range of r-calculated	Cronbach's Alpha	Conclusion
AI Reliance (X)	0.481–0.772	0.849	Valid and Reliable
Professional Skepticism (Z)	0.512–0.798	0,863	Valid and Reliable
Quality of Professional Judgment (Y)	0.497–0.781	0.857	Valid and Reliable

The classical assumption tests further support the suitability of the regression model for hypothesis testing. The residuals were normally distributed based on the Kolmogorov–Smirnov test (Sig. = 0.163). The variance inflation factor (VIF) values for all independent variables were below 10, indicating the absence of problematic multicollinearity. In addition, the Glejser test produced significance values above 0.05, indicating that heteroscedasticity was not detected. Collectively, these results suggest that the regression model satisfies the relevant assumptions required for subsequent hypothesis testing.

The moderated regression analysis provides evidence that the effect of AI reliance on the quality of professional judgment is contingent upon professional skepticism. Model 1, which includes only the main effects, shows that AI reliance has a negative and statistically significant association with the quality of professional judgment ($B = -0.287$, $p < .001$), whereas professional skepticism has a positive and statistically significant association with the dependent variable ($B = 0.315$, $p < .001$). Model 2 incorporates the interaction between AI reliance and professional skepticism and produces a stronger explanatory capacity. The coefficient for AI reliance becomes more negative ($B = -0.392$, $p < .001$), while professional skepticism remains positive and significant ($B = 0.298$, $p < .001$). More importantly, the interaction term between AI reliance and professional skepticism is positive and statistically significant ($B = 0.221$, $p = .008$), providing evidence of a buffering moderation effect.

Table 4. Moderated Regression Analysis

Model	Variable	B	Standard Error	t	Sig.
1	Constant	4.102	0.256	16.023	0.000
	AI Reliance (X)	-0.287	0.074	-3.878	0.000
	Professional Skepticism (Z)	0,21875	0.069	4.565	0.000
2	Constant	3.986	0.251	15.880	0.000
	AI Reliance (X)	-0.392	0.079	-4.962	0.000
	Professional Skepticism (Z)	0,206944	0.067	4.448	0.000
	Interaction X × Z	0,153472	0.081	2.728	0.008

The improvement in explanatory power after introducing the interaction term provides additional support for the moderating role of professional skepticism. As shown in Table 5,

Model 1 explains 34.7% of the variance in the quality of professional judgment ($R^2 = 0.347$), with an adjusted R^2 of 0.335. After the interaction term is introduced, R^2 increases to 0.381 and adjusted R^2 increases to 0.363. The incremental contribution of the interaction term is 3.4 percentage points ($\Delta R^2 = 0.034$), and the change is statistically significant ($p = .008$). Thus, the inclusion of professional skepticism as a moderator significantly improves the explanatory capacity of the model.

Table 5. Comparison of Coefficient of Determination Between Models 1 and 2

Model	R	R Square	Adjusted R Square	ΔR Square	Sig. F Change
1 (Main Effects)	0.589	0.347	0.335	—	0.000
2 (With Interaction)	0.617	0.381	0.363	0.034	0.008

The direction of the interaction coefficient is particularly important for interpreting the moderation effect. The direct coefficient of AI reliance is negative, whereas the interaction coefficient between AI reliance and professional skepticism is positive. This configuration indicates that increasing professional skepticism weakens the negative association between AI reliance and the quality of professional judgment. Accordingly, H1, H2, and H3 are supported. More specifically, AI reliance is associated with a decline in professional judgment quality when considered without an adequate cognitive safeguard; professional skepticism is positively associated with professional judgment quality; and professional skepticism buffers the adverse association between AI reliance and professional judgment quality.

The qualitative findings provide a substantive explanation for this statistical pattern. Ten government auditors participated in the qualitative stage, and thematic analysis identified three interconnected themes concerning the way auditors interact with AI-based analytical systems. The first theme concerns AI as a complementary instrument for auditors with high professional skepticism. Auditors characterized AI and data-analytic applications primarily as tools for identifying transactions or patterns that warrant further examination rather than as mechanisms for replacing professional judgment. One auditor explained:

“The data analytics application is useful for screening which transactions I should check first because there are thousands of them. But once the system flags a transaction as an anomaly, I still go directly to the field, check the source documents, and confirm with the relevant government agency. The system is the starting point, not the final basis for my conclusion.”

(Informant 3, Auditor, Aceh Inspectorate; high professional skepticism and low AI reliance).

This account illustrates a critical distinction between ****using AI to expand the auditor's analytical capacity and allowing AI to substitute for professional judgment****. For auditors with strong professional skepticism, AI-generated outputs appear to function primarily as investigative signals. The output initiates additional verification rather than terminating the auditor's inquiry. This behavior is consistent with the fundamental principle of professional skepticism, in which audit evidence is subjected to critical evaluation rather than accepted solely because it is generated by a sophisticated technological system.

The second theme reveals the opposite pattern among auditors characterized by relatively low professional skepticism and high AI reliance. In these circumstances, AI output may become a substitute for further investigation rather than an input into a broader professional evaluation. One informant stated:

"Honestly, if the system says there is no significant anomaly in an account, I tend not to investigate it further because examination time is limited and there are many reporting targets. Over time, I realized that this is a kind of laziness in thinking because I rely too much on the machine."

(Informant 7, Auditor, BPKP Representative Office of Aceh; low professional skepticism and high AI reliance).

The expression "laziness in thinking" provides an empirically grounded description of a cognitive process associated with automation bias and cognitive offloading. Rather than independently challenging the system's output, the auditor reduces the extent of additional cognitive processing once the system has produced a seemingly reassuring conclusion. In this context, technological efficiency may inadvertently reduce the auditor's level of critical engagement with the evidence. The finding is therefore important because it suggests that the risk associated with AI in auditing does not necessarily arise from the technology itself but from the manner in which its outputs are incorporated into professional decision-making.

The third theme demonstrates the role of professional skepticism as a cognitive safeguard against excessive trust in AI. Auditors with strong professional skepticism reported maintaining a deliberate degree of distance from technological outputs, including when those outputs appeared highly convincing. As one auditor explained:

"I always hold to the principle that no matter how sophisticated the system is, it was created and programmed by humans, so it must have limitations. The more convincing the system appears, the more cautious I become, because there may be patterns that the algorithm does not capture."

(Informant 1, Auditor, BPK RI Representative Office of Aceh; high professional skepticism and high AI reliance).

This account is particularly significant because the informant simultaneously reported high AI reliance and maintained high-quality professional judgment. The finding demonstrates that frequent or intensive use of AI does not necessarily result in weakened professional judgment. Instead, the consequences of AI reliance depend substantially on the auditor's ability to critically evaluate the limitations, assumptions, and outputs of the technology. Professional skepticism therefore functions as a cognitive control mechanism that prevents technological reliance from becoming uncritical dependence.

The integration of the quantitative and qualitative findings reinforces this interpretation. Table 6 presents the joint display linking the statistical relationships to the experiences reported by the interviewed auditors.

Table 6. Joint Display of Quantitative and Qualitative Findings

Hypothesis	Quantitative Finding	Supporting Qualitative Finding	Integrated Interpretation
H1	AI Reliance (X) → Y: B = -0.392; p < .001	"Laziness in thinking" resulting from excessive trust in system outputs	High AI reliance without an adequate cognitive safeguard can reduce the auditor's critical vigilance

H2	Professional Skepticism (Z) → Y: B = 0.298; p < .001	Skepticism encourages field verification even when the system indicates that an issue is “safe”	Professional skepticism remains a fundamental determinant of professional judgment quality, with or without AI
H3	Interaction X × Z: B = 0.221; p = .008	Skepticism functions as a “brake” that maintains critical distance from AI outputs	Professional skepticism determines whether AI functions as a complement to or substitute for professional judgment

Taken together, the findings reveal a more complex relationship than a simple positive or negative linear association between AI reliance and professional judgment. The negative direct effect of AI reliance provides empirical support for concerns associated with automation bias theory developed by Parasuraman and Manzey (2010), as well as concerns raised by international audit and assurance standard-setting and oversight bodies regarding excessive dependence on automated systems. However, the significant positive interaction between AI reliance and professional skepticism provides a more nuanced explanation: auditors are not inevitably trapped in automation bias simply because they use AI extensively. Rather, the magnitude of the adverse effect associated with AI reliance depends on the strength of the auditor's professional skepticism.

This finding also helps reconcile apparently contrasting results in the international literature. Chaker (2024), for example, reported a positive relationship between AI reliance and professional skepticism among auditors in France, whereas Deliu (2024) and various regulatory bodies have raised concerns regarding the potential erosion of professional skepticism resulting from increasing dependence on AI. The present findings suggest that these perspectives are not necessarily contradictory. Instead, they may describe different auditor conditions. Among auditors with high professional skepticism, extensive AI use can coexist with critical evaluation and high-quality professional judgment, consistent with the pattern reported by Chaker (2024). Conversely, among auditors with relatively low professional skepticism, high AI reliance may increase the likelihood that system outputs are accepted without sufficient independent verification, corresponding to the concerns articulated by Deliu (2024) and regulatory authorities.

The findings consequently position AI not as an inherently beneficial or harmful determinant of professional judgment but as a technology whose consequences are conditioned by the auditor's existing cognitive and professional characteristics. AI can increase analytical capacity, facilitate the identification of unusual transactions, and support the prioritization of audit procedures. However, these benefits may be accompanied by a greater risk of automation bias when auditors treat system-generated conclusions as sufficiently authoritative to terminate further inquiry. In this sense, AI may function as an amplifier of existing professional behavior: auditors with strong skepticism can use AI to expand their investigative capacity while maintaining critical judgment, whereas auditors with weaker skepticism may use the same technology to reduce rather than enhance cognitive engagement.

The qualitative finding concerning “laziness in thinking” is particularly relevant to understanding this mechanism. Although the term originates from the practical language of an auditor rather than from formal theoretical terminology, it closely reflects the underlying

process described in the literature on automation bias and cognitive offloading. The auditor's statement indicates that technological reliance may reduce the motivation or perceived necessity to independently process information when an automated system provides a seemingly definitive assessment. This finding contributes empirical depth to the theoretical discussion because it demonstrates how abstract cognitive mechanisms can manifest in the everyday decision-making practices of government auditors.

From an institutional perspective, the findings have important implications for the development of government auditing capabilities. Restricting AI adoption solely because of the risk of automation bias would be an inadequate response because it could sacrifice potential efficiency and analytical benefits associated with technological innovation. A more appropriate strategy is to develop AI capability and professional skepticism simultaneously. Auditor training should therefore not focus exclusively on technical AI literacy but should also strengthen the ability to question algorithmic outputs, identify potential limitations in analytical models, seek corroborating evidence, and maintain independent professional judgment. In other words, technological competence should be accompanied by cognitive safeguards that enable auditors to recognize when AI should inform a decision and when its output requires further challenge or verification.

This approach is consistent with Lastri et al. (2022), who emphasized the important role of professional skepticism in improving audit quality within the Aceh Inspectorate context. The present study extends that perspective by placing professional skepticism within an increasingly digital audit environment. The contribution is therefore not simply to reaffirm the importance of skepticism but to demonstrate its moderating function in the relationship between AI reliance and professional judgment. Professional skepticism emerges as a critical boundary condition determining whether AI operates as an extension of the auditor's analytical capabilities or becomes a substitute for independent professional reasoning.

Overall, the integrated findings demonstrate that the central issue in AI-assisted government auditing is not whether auditors use AI, but **how critically they use it**. High AI reliance does not inevitably compromise professional judgment, nor does technological sophistication automatically improve audit decision-making. The critical factor is whether auditors retain sufficient professional skepticism to treat AI outputs as evidence requiring evaluation rather than as conclusions requiring acceptance. The statistically significant buffering effect and the supporting qualitative accounts jointly establish that professional skepticism is a key mechanism for preserving the quality of professional judgment in an AI-enabled government audit environment.

Conclusion

Based on the mixed-methods analysis conducted in this study, the findings demonstrate that AI reliance has a negative and significant effect on the quality of professional judgment among government auditors in Aceh. This finding indicates that greater reliance on artificial intelligence in the audit process does not necessarily enhance the quality of auditors' professional judgments. Instead, excessive dependence on AI may weaken the auditor's active cognitive engagement in evaluating audit evidence, particularly when AI-generated outputs are accepted without sufficient critical examination. In contrast, professional skepticism is found to have a positive and significant effect on the quality of professional judgment, indicating that auditors who maintain a higher level of skepticism are more capable of critically evaluating information, questioning AI-generated recommendations, and integrating technological outputs with their own professional knowledge and judgment. Furthermore, professional skepticism significantly moderates the relationship between AI reliance and professional judgment quality, exhibiting a buffering pattern in which higher levels of professional skepticism mitigate the negative effect of AI reliance. This finding suggests that

the consequences of AI reliance are not uniform across auditors but depend substantially on how auditors cognitively and professionally engage with AI-generated information. The qualitative findings further explain this relationship by indicating that auditors with strong professional skepticism tend to treat AI as a complementary decision-support tool whose outputs require verification and critical evaluation. Conversely, auditors with lower levels of professional skepticism are more likely to treat AI as a substitute for their own professional judgment and accept its recommendations with limited scrutiny. Thus, the central finding of this study is not merely that AI reliance may impair professional judgment, but that the extent to which such reliance becomes problematic depends on the auditor's capacity and willingness to maintain critical evaluation when interacting with AI.

These findings contribute theoretically to the literature by extending automation bias theory and the trust in automation framework to the context of regional public-sector auditing. More specifically, this study positions professional skepticism as a cognitive buffering mechanism that can be empirically examined rather than being treated solely as a normative characteristic expected of auditors. The findings suggest that the relationship between auditors and AI should not be understood exclusively from a technological perspective, because the quality of AI-assisted auditing is also determined by the cognitive characteristics of the individuals who use the technology. From this perspective, AI adoption may create different outcomes depending on whether auditors retain sufficient independence of judgment and professional skepticism when evaluating AI-generated information. The buffering role identified in this study therefore provides an important theoretical basis for understanding why similar levels of AI reliance may produce different consequences for professional judgment quality across auditors. In practical terms, these findings have implications for government audit institutions in Aceh, including the Aceh Inspectorate, district and municipal inspectorates, the Aceh Representative Office of the Financial and Development Supervisory Agency (BPKP), and the Aceh Representative Office of the Audit Board of the Republic of Indonesia (BPK RI). These institutions should consider developing training programs that integrate AI literacy with the strengthening of professional skepticism rather than treating technological competence and professional judgment as separate training domains. Such an integrated approach is important because the adoption of AI-assisted audit technologies should not progress more rapidly than auditors' cognitive, professional, and ethical readiness to use those technologies appropriately. AI literacy should therefore encompass not only the technical ability to operate AI-based audit tools but also the ability to recognize potential limitations, question algorithmic outputs, identify possible automation bias, and independently evaluate whether AI-generated recommendations are supported by sufficient and appropriate audit evidence.

Despite these contributions, several limitations should be considered when interpreting the findings. First, the use of purposive sampling and the concentration of the sample on government auditors in Aceh limit the extent to which the findings can be generalized to other geographical, institutional, or auditing contexts. Differences in organizational culture, technological maturity, regulatory environments, audit practices, and auditor characteristics may influence the relationship between AI reliance, professional skepticism, and professional judgment quality. Accordingly, the findings should be generalized beyond the Aceh context with appropriate caution. Second, the measurement of professional judgment quality relies on self-reported responses, which may be subject to social desirability bias. Auditors may report levels of professional skepticism or judgment quality that reflect perceived professional expectations rather than their actual behavior when interacting with AI-based audit systems. This limitation is particularly relevant when examining constructs associated with professional competence and ethical conduct, where respondents may have an incentive to provide socially desirable responses. Third, the cross-sectional design of the study restricts the ability to capture changes in AI reliance and professional skepticism over time. Auditors'

interactions with AI technologies are likely to evolve as their technological familiarity, professional experience, and exposure to AI-assisted auditing increase. Consequently, the observed relationships represent conditions at a particular point in time and cannot establish how these relationships may develop as auditors gain greater experience with AI.

Future research should therefore address these limitations by adopting research designs capable of capturing changes in auditor behavior and cognition over time. Longitudinal studies would be particularly valuable for examining how AI reliance and professional skepticism develop as auditors accumulate experience with AI-assisted audit technologies and as these technologies become increasingly embedded in audit processes. Future studies should also expand the research setting beyond Aceh by including auditors from other provinces or jurisdictions, thereby enabling comparative analysis across different institutional and technological environments. Such comparative research could provide stronger evidence regarding the contextual factors that influence the relationship between AI reliance, professional skepticism, and professional judgment quality. In addition, future research should consider complementing self-reported measures with more objective assessments of professional judgment quality. Case-based judgment tasks, experimental scenarios, or other structured decision-making assessments could be employed to observe how auditors respond to AI-generated recommendations under controlled conditions. This approach would reduce dependence on self-reported perceptions and provide stronger evidence regarding the actual behavioral consequences of AI reliance and the extent to which professional skepticism protects auditors from inappropriate reliance on AI-generated outputs. Taken together, these directions would strengthen the empirical understanding of human–AI interaction in auditing and provide a more robust basis for developing audit practices and institutional policies that promote responsible AI adoption without compromising the quality, independence, and professional integrity of auditors' judgments.

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