

Auditors' Perceptions of Artificial Intelligence Adoption in Internal Auditing: Evidence from Big Four Firms in Saudi Arabia

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Abstract: Artificial Intelligence (AI) is reshaping internal auditing practices, raising important questions related to professional judgement, organizational readiness, and ethical and professional considerations. Big Four firms (Deloitte, PwC, EY, and KPMG) are leading adopters of AI, integrating intelligent systems to automate audit processes and enhance service delivery. This study examines how internal auditors in Big Four firms in Saudi Arabia perceive AI adoption in internal auditing. A quantitative design was employed. Data were collected through a closed-ended questionnaire distributed to 300 internal auditors and analyzed using SPSS. The key variables were perceived usefulness (PU), perceived ease of use (PEOU), organizational readiness (OR), and ethical and professional concerns. Results reveal strong positive correlations between AI adoption and PU ($r = 0.956$), PEOU ($r = 0.949$), and OR ($r = 0.930$), and a moderate correlation with ethical concerns ($r = 0.777$). Regression analysis shows that all variables significantly influence AI adoption ($p < 0.01$). The findings emphasize the need for clear ethical and professional frameworks to support sustainable AI adoption in internal auditing.

Keywords: Technology Acceptance Model - Digital Transformation - Ethical Governance - Institutional Readiness - Algorithmic Accountability.

تحليل تبني الذكاء الاصطناعي في المراجعة الداخلية: أدلة مهنية وتنظيمية من شركات المراجعة الأربع الكبرى

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مستخلص البحث: يشهد التدقيق الداخلي تحولاً متسارعاً نتيجة التوسع في استخدام تقنيات الذكاء الاصطناعي، مما يثير تساؤلات تتعلق بالحكم المهني، والجاهزية التنظيمية، والاعتبارات الأخلاقية والمهنية تهدف هذه الدراسة إلى فحص تصورات المدققين الداخليين في شركات المراجعة الأربع الكبرى في المملكة العربية السعودية تجاه استخدام الذكاء الاصطناعي، وتحديد العوامل المؤثرة في تبنيه ضمن بيئة مهنية عالية التنظيم. اعتمدت الدراسة المنهج الكمي، حيث تم جمع البيانات باستخدام استبانة مغلقة وزعت على عينة مكونة من 300 مدقق داخلي، وتم تحليل البيانات باستخدام برنامج SPSS. شملت المتغيرات الرئيسية المنفعة المتصورة، وسهولة الاستخدام المتصورة، والجاهزية التنظيمية، والاعتبارات الأخلاقية والمهنية. أظهرت نتائج تحليل الارتباط وجود علاقات إيجابية قوية بين استخدام الذكاء الاصطناعي وكل من المنفعة المتصورة ($r = 0.956$)، وسهولة الاستخدام المتصورة ($r = 0.949$)، والجاهزية التنظيمية ($r = 0.930$)، في حين وجد ارتباط متوسط مع الاعتبارات الأخلاقية والمهنية ($r = 0.777$). كما أظهرت نتائج تحليل الانحدار أن جميع المتغيرات لها تأثير معنوي إحصائي ($p < 0.01$). وتؤكد النتائج أهمية الدعم التنظيمي وتطوير أطر أخلاقية واضحة لتعزيز استخدام الفعال للذكاء الاصطناعي في التدقيق الداخلي.

الكلمات المفتاحية: نموذج قبول التقنية - التحول الرقمي - الحوكمة الأخلاقية - الجاهزية المؤسسية - المساءلة الخوارزمية



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1. Introduction

The use of AI in auditing is the result of improved conventional assessment procedures, which were mostly manual, sample-based, and time-consuming (Rajput & Katamba, 2024). The use of AI with machine learning, natural language processing, data analytics, and robotic process automation in audit processes helps in conducting full-population analysis, identifying anomalies in real-time, and producing predictive insights (Puthukulam et al., 2021; Rikhardsson et al., 2022). The results are much faster and accurate, which makes them superior to traditional methods of auditing that are handled manually (Stensjö, 2020). Research has shown that the integration of AI makes fraud detection more accurate and risk assessment better, and also automates redundant operations, which frees up auditors to concentrate on strategic tasks (Ashir & Mekonen, 2024; Munoko et al., 2020). The increase in AI is part of digital transformation in business functions that are contributing to efficiency gains, increased insights, and a move towards continuous auditing approaches (Khan et al., 2024). Studies indicated that adoption of AI in audit area has been associated with 5.0% dampening in the probability of financial restatement as well as an approximate reduction in audit cost by 0.9%, which represents better quality of the audit and economy (Fedyk et al., 2022). The integration of AI in the audit functions cuts off human audit work in the long-run. In one study, accounting staff were reported to diminish by 3.6% within three years and by up to 7.1% within four years, implying that the future of audits could be found in analytics-based positions (Fedyk et al., 2022).

The role of internal auditor is transforming to be not based on manual checklists but using technologies that assist in the definition of assurance models through AI and data analytics (Ogunsola et al., 2021). Conventional in-house audits depended on the discretion of auditors in testing small samples, which in most cases were limited by time and the size of data (Khan et al., 2024). Conversely, AI-powered audits automate repeat processes, process entire datasets and pattern finding, among other things, which human auditors may be exempted (Manita et al., 2020). It has been noted that automation minimizes manual intervention and increases real-time risk monitoring to reach the point where internal auditors can be used as strategic advisors and not only control reviewers (Stensjö,

2020). Such digital transformation requires new capabilities, such as knowledge about data literacy and analytics, as increasing numbers of auditors turn to AI to create insights, advance risk evaluation, and enhance governance results. AI application in the field of auditing helps to automatize the routine risk evaluation, improve the detection of anomalies, and continuously monitor compliance (Bruno & Skoglund, 2024). As an example, machine learning-based analytics can ensure better fraud detection and the raising of irregularities, whereas natural language processing can effectively enhance audit reporting and reviewing regulators, enhancing the accuracy and efficiency of audit and compliance processes (Baharom, 2025).

The Big Four accounting firms, PwC, Deloitte, EY, and KPMG, are well-known firms worldwide with their audit, advisory, tax, and consulting services (Bruno & Skoglund, 2024). Their expertise in implementing new technologies like AI and advanced analytics has been significant in the development of auditing standards, better governance systems, and better risk management in all parts of the world (Islam, 2020). For example, Deloitte developed Argus, which is an AI-based tool for internal auditing practices (Hasan, 2021; Malouin, 2021). The Aura, an AI and cloud-based audit technology platform by PwC, employs a team of complex analytics and automation to incorporate audit planning, risk evaluation, and data analysis throughout the audit lifecycle. It facilitates automation and real-time insight (Boughezala Hamad & Ould Bahammou, 2024). KPMG Clara is a smart audit platform based on AI and cloud technology aimed to evaluate the risk, facilitate data-driven audit processes, and enhance real-time collaboration and quality of audit with the help of AI and automation (Ornob, 2023). Helix- An AI-based data analytics solution designed by EY to analyze huge volumes of data to identify risk patterns, anomalies, and trends with regards to audit engagements (Luthfiani, 2024).

These firms in Saudi Arabia can assist local organizations to adopt strong internal audit practices, to adopt AI applications, and also to enhance corporate governance activities. They are highly skilled, which conforms to the Vision 2030 of the Kingdom which focuses on the use of digital transformation, technological innovation, and improved transparency in financial and organizational processes with massive integration of AI (Odetunde et al., 2021).

According to Baharom (2025), the application of AI in internal auditing provides performance gains that can be measured. Indicatively, machine learning detected fraud with an 85% accuracy as compared to the traditional methods, which detected fraud with only 60%, indicating significant improvements in audit quality due to the adoption of AI (Baharom, 2025). According to research, 23% of auditors have effectively switched to strategic advice roles after adopting AI, and 35% of the users have claimed a drop in professionalism due to the use of AI (Baharom, 2025). Rikhardsson et al. (2022) defined that the expectations of AI use in the world have been high over the years. Based on a report of the World Economic Forum (2015), 75% of the Chief Information Governors respondents thought that by 2025, AI would be applicable in around 30% of corporate audits. Such a premature prediction indicates the success of the idea of AI infiltration into the audit processes over time (Anh et al., 2024; Rikhardsson et al., 2022).

Considering the accelerated digital change, driven by the Saudi Vision 2030 of the growing use of AI-based solutions, it is necessary to understand how internal auditors view and use AI tools (Alharbi, 2023). Existing research indicated that AI is progressively becoming embedded in auditing practices all over the world. The Big Four firms also integrated AI. In emerging markets, internal auditing is undergoing significant changes due to regulatory updates, enhanced governance, and rapid digitalization. Unlike in developed countries, these regions face simultaneous growth in institutions and technology, which creates unique challenges for audit functions to improve transparency, accountability, and efficiency while keeping up with changing regulations. In these settings, the adoption of AI is influenced by not only technological views but also the maturity of institutions, the capacity of organizations, and frameworks for professional accountability. Saudi Arabia serves as a particularly dynamic example within this context. The Vision 2030 initiative has accelerated digital transformation, bolstered governance structures, and raised expectations for internal control systems. In the Kingdom, Big Four firms operate at the crossroads of global professional standards and local regulatory demands, making it an intriguing setting to explore how institutional and professional dynamics influence AI adoption in internal auditing.

Most of the existing studies have concentrated on the overall attitudes of auditors towards AI, and the perception of internal auditors towards AI technologies, their related interpretation, and application have not been appropriately addressed, especially when it comes to the highly organized setting of Big Four firms (Eyada; Hasan, 2021; Malouin, 2021). The context of Saudi Arabia, due to its digital transformation goals of Vision 2030, is a unique place to delve into these dynamics. In spite of increasing focus on technological innovation in the auditing sphere, the facts of behavioral, organizational, and ethical variables that account for the internal auditor acceptance of AI tools in emerging markets are relatively little understood. It is not clear whether internal auditors view AI as an opportunity to improve audit quality and efficiency or as a disruptive factor, which can question the professional judgment and ethics. This gap highlighted the need to conduct this study that incorporated technological, organizational, and ethical levels into the framework of the Technology Acceptance Model (TAM) to clarify how internal auditors see AI integration in Saudi Arabia within the Big Four firms.

This study is significant because it fulfilled the gap in research concerning AI adoption in the internal auditing sector in developing economies in the context of Middle East Big Four firms. This study provided useful information to policymakers to implement AI ethically and professionally in Saudi Big Four firms. The study determined perceptions of auditors, gaps in capabilities, and difficulties in adoption. This will allow the firms to develop specific training programs and enhance the workforce preparedness to handle the auditing technology potentials of AI. This study supported ethical AI implementation, data security, and responsibility in the internal audit departments. Big four firms provide support in digital transformation, large-scale economic projects and in financial reporting standards in Saudi Arabia (Rajput & Katamba, 2024). Therefore, all these can contribute to more responsible, efficient, and sustainable integration of AI in Saudi Arabia. This study aimed to discuss how internal auditors of Big Four firms in Saudi Arabia perceive the integration of AI in terms of its benefits, usage, organisational readiness, and barriers due to ethical and professional concerns.

1.1 Research Question

How do internal auditors in the Big Four firms in Saudi Arabia perceive the integration of AI in internal auditing, particularly in terms of benefits, ease of use, organizational readiness and barriers?

2. Literature Review

2.1 Perceptions about AI

According to the Technology Acceptance Model, (TAM), the usefulness and benefits of a technology have a strong impact on the individual attitudes and intentions towards using the technology (Almagrashi et al., 2023; Puthukulam et al., 2021). Studies indicated that perceptions are not only influenced by technical features, but also by organizational circumstances, the functions that an auditor performs and institutional dynamics in general (Kayser & Telukdarie, 2023). Studies indicated the potential of AI in enhancing the quality of the audit in the Gulf, discovered that willingness to use AI was undermined by lack of training and the ability to practice it efficiently (Alhazmi et al., 2025; Khan et al., 2024). Similarly, the study by Ghazi (2024), found out that the perceptions of AI by auditors were directly influenced by their technological familiarity and the clarity of the implementation strategies of their firm.

Alhazmi et al (2025) defined that the attitude towards AI integration in Saudi Arabia is positive, especially with respect to real-time reporting and detecting anomalies. By comparison, older auditors were more sceptical and tended to be more questioning about the transparency of AI results and its accuracy (Eyada). There was more enthusiasm and openness among junior auditors with senior auditors being more sceptical. Ashir and Mekonen (2024) pointed out that institutional support, such as access to tools, management commitment, and a culture of innovation, has a strong positive impact on the perceptions of auditors of AI. Psychological resistance, organizational culture and uncertainty of regulators are also important determinants of auditor perceptions and technical preparedness (Ashir & Mekonen, 2024). It is argued that the latent opposition is due to the fear of job displacement or of not understanding the role of AI, especially when it is conceived as a threatening factor to the existing auditing jobs, and can be interpreted in terms of replacing the human factor of professional judgment instead of aiding it (Baharom, 2025).

According to the literature, generally AI is perceived by auditors positively, but conditionally and very context-dependent. The extent to which AI is accepted by internal auditors relies on a diverse range of influencing factors and they will entail training support, job description and roles, communication within the management, and perceived professional danger.

H1: Perceived usefulness of AI significantly impacts AI adoption among internal auditors.

2.2 Benefits of AI in Internal Auditing

The implementation of AI in internal auditing brought tremendous benefits (Baharom, 2025). The use of AI tools enhances the effectiveness of the audit, makes the work more efficient and helps make strategic decisions. Bruno and Skoglund (2024) defined that these benefits are particularly important in situations of high-pressure audit, where precise insights are critical in evaluating controls, risk and compliance. Through automation of repetitive tasks, it lessens the issue of manual fatigue and increases the accuracy of financial reporting. In Saudi Arabia, AI was found to increase the quality of audits. AI can detect risks related to audit and anomaly discovery, where conventional methods are usually restricted in scope (Ashir & Mekonen, 2024). The adoption of AI in Big Four firms in Saudi Arabia increased the coverage of audit and minimized the margins of audit error (Alharbi, 2023).

The auditors have observed that the AI-enabled systems handled big volumes of data more effectively, leading to increased credibility of delivery of veritable conclusions and interest by the stakeholders (Almagrashi et al., 2023). With AI, continuous and predictive auditing around the world can be made possible. Due to the effect of their global study, audit teams consisting of AI tools provide real-time information and early warning messages, and therefore, they can convert reactive controls into proactive assurance. In their firms, internal auditors took on a strategic position due to this change (Almagrashi et al., 2023). Along with better results in terms of operation, various investigations have depicted psychological and professional advantages. Auditors said that they were more motivated, felt more satisfied with their job, and perceived less cognitive load when they viewed AI as a supportive technology, versus a threat (Kayser & Telukdarie, 2023). The application

of AI has similarly been introduced as a significant input in audit data visualization and fraud detection, especially when the level of complexity is high.

H2: Perceived ease of use of AI significantly impacts AI adoption among internal auditors.

2.3 Organizational Readiness Using AI

The presence of organizational readiness in the literature has been acknowledged as a key driver of the successful implementation of AI technologies in the sphere of professional services, which auditing belongs to (Alharkan and Asad, 2022; Khalil et al., 2021). It includes the provision of technological support, management support, training, and strategic alignment that help firms to apply emerging technologies (Rajput & Katamba, 2024). When applied to Saudi Big Four firms, the research demonstrated that flourishing audit firms tend to focus on competitive advantages through AI systems, cloud-based applications, and more efficient data analytics systems to ensure a competitive edge in a fast-changing financial environment (Kayser & Telukdarie, 2023). In the literature, organizational readiness is also characterized by the need to contribute to and support a culture that will encourage innovation and digital transformation, which is imperative in implementing AI in the normal auditing activities (Stensjö, 2020). What is more, firms operated with well-organized training and development processes can provide employees with the opportunity to make the most efficient use of AI tools as it is possible to match technological use to professional and regulatory requirements (Rikhardsson et al., 2022). It indicates that the concept of organizational readiness in Saudi Big Four firms is multidimensional and includes not only the state of infrastructure but also strategic, cultural, and educational aspects that can contribute to the overall increase in the success of AI implementation.

H3: Organizational readiness significantly impacts AI adoption among internal auditors.

2.4 Ethical and Professional Concerns Using AI in Audit

According to existing research of Ashir and Mekonen (2024), ethical and professional concerns are major determinants of AI adoption in auditing and professional services. Algorithms bias, data privacy, accountability, and transparency are some of the issues that have a substantial impact on the

way AI is implemented and used in audit firms. Regarding Saudi Big Four firms, it has been captured in the literature that these ethical dilemmas are especially pertinent as the requirements of the regulations are strict and professional ethics related to financial reporting and auditing practices (Ashir & Mekonen, 2024; Baharom, 2025). Research has indicated that in the absence of strong ethics, firms would end up misunderstanding the AI results which would destroy trust in technology and, as such, may compromise on the quality of audits (Bruno & Skoglund, 2024). The necessity to have standardized procedures, guidelines, and governance mechanisms is also highlighted in literature in order to promote ethical compliance especially when applying AI in the data analysis and decision-making processes in complicated auditing landscape (Anh et al., 2024). As a result, ethical and professional issues remain not only obstacles to adoption but also a strategic emphasis area in Saudi Big Four firms, which influence the design, application, and monitoring of AI technologies to be able to use AI responsibly and compliantly.

H4: Ethical and professional concerns significantly impact AI adoption among internal auditors.

3. Theoretical Framework

3.1 Technology Acceptance Model (TAM)

The Technology Acceptance Model (TAM) is used in this study to explore the adoption of AI tools by internal auditors in Big Four firms in Saudi Arabia. The Technology Acceptance Model (TAM) (Davis, 1989) describes how technology is adopted by focusing on perceived usefulness (PU) and perceived ease of use (PEOU). While it has been extensively used in organizational research (Venkatesh & Davis, 2000), auditing studies have primarily concentrated on individual perceptions, often overlooking the structural and ethical aspects of highly regulated settings. In the realm of internal auditing, especially within Big Four firms, the adoption of technology is influenced not only by cognitive assessments but also by the organization's capacity and professional responsibility. This study, therefore, expands TAM by including organizational readiness and ethical and professional issues as contextual factors influencing AI adoption. Organizational readiness involves infrastructure, managerial backing, training, and

strategic alignment, whereas ethical considerations cover data privacy, algorithmic transparency, professional judgment, and regulatory compliance (Munoko et al., 2020; Koshiyama et al., 2024). By integrating these contextual elements into TAM, the study suggests a framework specifically designed for institutionalized audit environments. This extension is particularly pertinent in Saudi Arabia, where Vision 2030 has hastened digital transformation under stringent regulatory supervision, providing a transferable framework for exploring AI adoption in similarly regulated professional settings.

Perceived Usefulness (PU) and Perceived Ease of Use (PEOU) have long been seen as determinants of an individual's intention to utilize technology in TAM (Anh et al., 2024). In this study, PU is used to record the beliefs by auditors that AI tools enhance efficiency in the performance of an audit, its quality and its overall performance; PEOU showed the extent to which auditors believe that AI is easy to learn, integrate and use in their daily audit work. Contextual factors related to the auditing environment in Saudi

Arabia, i.e. Organizational Readiness (OR) and Ethical and Professional Concerns were introduced in the extension of the model. OR looks at whether infrastructure, training, and management support the adoption of AI sufficiently. However, ethical and professional concerns indicated ethical issues of auditors were related with data privacy, bias, and accountability.

4. Conceptual Framework

Figure 1 represents the conceptual model according to the TAM. The dependent variable is AI adoption in internal auditing, which represents the intention of AI tools by auditors and their use. The independent variables (IVs) include the major TAM dimensions; PU, PEOU, OR and, Ethical and Professional Concerns. All IVs are assumed to have an effect on the adoption of AI. PU represented the perception of auditors that AI enhances efficiency and quality, PEOU is representing the perceived workload of AI use, OR is the infrastructure and training support, and challenges are included as ethical and professional inhibitors.

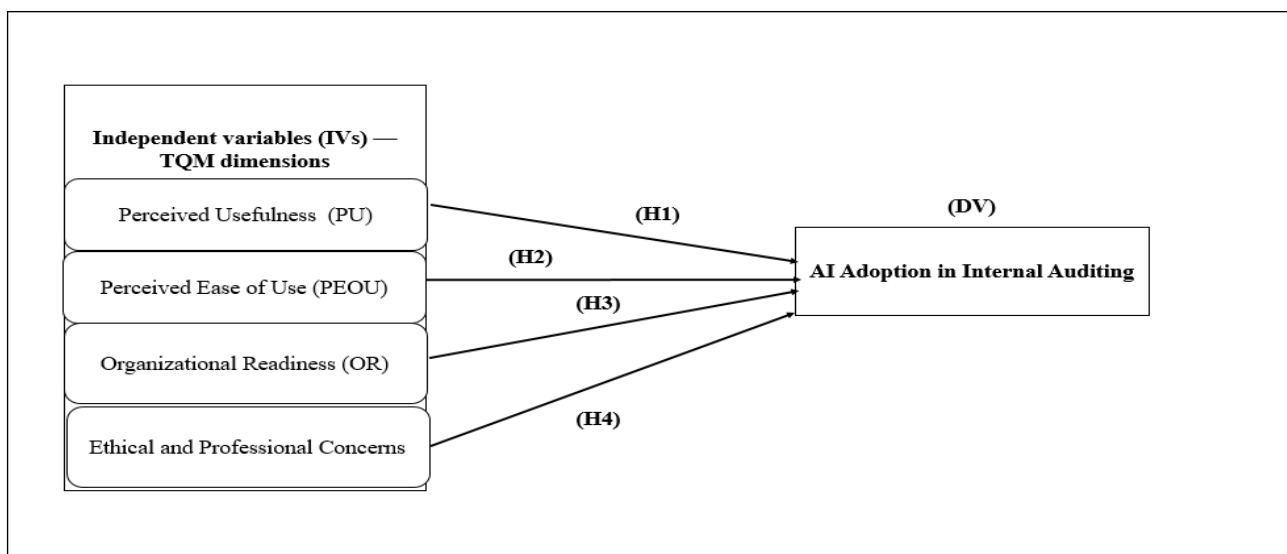


Figure 1: Conceptual Framework

5. Methodology

5.1 Research Design

This study adopted a quantitative design to examine the perceptions and adoption of AI by internal auditors in the Big Four firms in Saudi Arabia, through the integration of the TAM theoretical framework. The study investigated the effects of PU, PEOU, OR and ethical and professional apprehension on the adoption of AI in internal auditing. A quantitative method was deemed suitable to measure the attitudes, experiences, and organizational factors of auditors in a systematic manner and to test hypotheses. The emphasis on the Big Four firms, namely PwC, Deloitte, EY, and KPMG, can give an idea about the use of AI in audit contexts that are highly structured and technology-driven in the Saudi Arabian context.

5.2 Data Collection

Data were gathered using a structured, close-ended questionnaire aimed at assessing Perceived Usefulness (PU), Perceived Ease of Use (PEOU), Organizational Readiness (OR), and Ethical and Professional Concerns associated with the adoption of AI in internal auditing. The measurement items were adapted from well-established TAM instruments (Davis, 1989; Venkatesh & Davis, 2000) and previous studies on AI auditing, with slight wording modifications to ensure they were contextually appropriate for Big Four internal auditing practices in Saudi Arabia while maintaining their conceptual integrity. The instrument included 13 items spread across four constructs (PU = 3, PEOU = 3, OR = 3, Ethical and Professional Concerns = 4). Responses were captured using a five-point Likert scale (1 = Strongly Disagree to 5 = Strongly Agree), in line with TAM-based research. The questionnaire was distributed electronically to internal auditors within Big Four firms, given their structured, technology-driven environments where AI integration is institutionally embedded.

5.3 Participants

The respondents were internal auditors of PwC, Deloitte, EY and KPMG in Saudi Arabia. The study selected purposive sampling to include auditors who had direct experience or exposure to AI-based auditing tools. The actual sample used was 300 auditors and the sample of the participants covered a wide range of demographics including; age, gender, and years of professional experience.

This allowed the possibility to conduct an analysis of the differences in perceptions and adoption patterns depending on these factors. A purposive sampling method was employed to ensure participants had firsthand experience or familiarity with AI-driven audit tools. The emphasis on the Big Four firms is methodologically sound, as these organizations exemplify highly institutionalized, technology-driven audit settings where AI is seamlessly integrated into operations. A sample of 300 participants is deemed statistically sufficient for regression analysis and surpasses the minimum requirement suggested for behavioral research models.

5.4 Data Analysis

The data was analyzed by SPSS software. Descriptive statistics was used to summarize the demographics and responses of the participants to the items in the survey in terms of frequencies, and percentages. Cronbach alpha was used to analyze reliability, which indicated that internal consistency of the constructs was reliable, PU, PEOU, OR and ethical and professional concerns were reliably measured. The Pearson correlation test was used to find out the strength and direction of linear relationship among independent variables and AI adoption in internal auditing. Lastly, the linear regression analysis has been used to verify the predictive impacts of independent variables on the adoption of AI. This discussion made it possible to have a clear picture of how the auditors feel about AI tools, the organizational environment, and ethical issues in Saudi Arabia, which informs the theoretical and practical considerations of the use of AI in internal auditing. While some predictors showed relatively high inter-correlations, this pattern aligns with theoretical expectations in TAM-based research, where perceived usefulness and perceived ease of use are conceptually linked constructs (Davis, 1989; Venkatesh & Davis, 2000). The stability and statistical significance of the regression coefficients indicate that multicollinearity does not significantly diminish the model's explanatory power, consistent with established guidelines for regression diagnostics (Field, 2018). To address potential response bias from self-reported data, procedural measures were taken, such as ensuring anonymity, allowing voluntary participation, and structurally separating constructs within the questionnaire. These controls are advised to mitigate the risks of common method

bias (Podsakoff et al., 2003). The assumptions of linear regression were also evaluated. With a large sample size ($n = 300$), the model benefits from the robustness of ordinary least squares estimation, and the stability of the coefficients suggests that key assumptions, including linearity, are reasonably met.

6. Results and Discussion

6.1 Implications of quantitative findings

• Demographics

Table 1 shows the demographics of the internal auditors who fulfilled the survey. Most of the respondents had an age between 30 and 40, i.e., 44.0%, whereas 32.7% were between 25 and 32. Only 23.3% i.e. 70% were above 40+. Gender wise, 60.3% i.e. (181) were male, and 39.7 (119) were female. Concerning job experience, the majority of the respondents indicated 46 years 44.7% (134), 0-3 years were 23.3% (70) and only 32.0% (96) had 7+ years of experience.

Table 1: Demographics

Variable	Category	Frequency	Percent	Valid Percent
Age	25-32 (0)	98	32.7	32.7
	33-40 (1)	132	44.0	44.0
	40+ (2)	70	23.3	23.3
Gender	Male (1)	181	60.3	60.3
	Female (2)	119	39.7	39.7
Years of Job Experience	0-3 years (0)	70	23.3	23.3
	4-6 years (1)	134	44.7	44.7
	7+ years (2)	96	32.0	32.0
Total		300	100.0	100.0

6.2 Reliability Analysis

Table 2 indicates the reliability of a questionnaire that was tested to provide information regarding the internal consistency of all items in each of the study variables (George and Mallery, 2018). It was determined that the items would be reliable, as Cronbach's Alpha was determined, and answers were measured on the Likert scale based on Strongly Disagree to Strongly Agree. As indicated in Table 2, the calculated values of Cronbach's alpha of all the variables were more than 0.7: PU = 0.839, PEOU = 0.840, OR = 0.770 and ethical and professional concerns = 0.750. These findings prove that all questionnaire variables are valid and can be used in further analysis in the study.

Table 2: Reliability Analysis

Dimension Name	Number of Statements	Cronbach's Alpha (α)
PU	3	0.839
PEOU	3	0.840
OR	3	0.77
Ethical and Professional Concerns	4	0.75

6.3 Frequency Analysis

Table 3 shows the results of the frequencies of PU, PEOU, OR and ethical and professional concerns, according to which the respondents mostly have a positive view of the use of AI in internal auditing. The overall reaction of all constructs is a strong agreeing position; this points to high perceived usefulness, ease of use, and internal ready willingness of organizations to adopt AI by internal auditors in Big Four companies in Saudi Arabia. Simultaneously, the moral and professional issues, especially, the bias of algorithms and data privacy are also severely recognized. This is indicative of a two-sided attitude: great acceptance and willingness to use AI and an increased perception of governmental risks and ethical risks to be addressed to enact AI use in internal auditing in a responsible and sustainable way.

Table 3: Frequency Analysis

Construct	Item	Most Common Response	Frequency	Percent (%)
PU	Q1: AI improves overall audit efficiency	Strongly Agree	179	59.7
PU	Q3: AI helps perform audit tasks faster	Strongly Agree	163	54.3
PEOU	Q1: Learning to use AI is easy and time-saving	Strongly Agree	165	55.0
PEOU	Q3: AI applications are user-friendly	Strongly Agree	158	52.7
OR	Q1: Organization has adequate infrastructure	Strongly Agree	171	57.0
OR	Q3: Sufficient training is provided	Strongly Agree	153	51.0
Ethical Concerns	Q1: Algorithmic bias is a concern	Strongly Agree	163	54.3
Ethical Concerns	Q3: Privacy, confidentiality, accountability are concerns	Strongly Agree	141	47.0

6.4 Correlation Analysis

Correlation analysis was used to identify the strength and direction of the linear relationship between the variables. Table 7 shows the correlation analysis of PU, PEOU, OR and ethical and professional concerns with the adoption of AI in internal auditing. The correlation value for PU is 0.95**, PEOU is 0.94**, and OR is 0.93, which indicates positive and strong correlation. Despite the high correlation coefficients, this likely indicates the close conceptual relationship of TAM constructs within highly institutionalized, technology-driven settings like Big Four firms. In structured audit environments, perceived usefulness, perceived ease of use, and organizational readiness often develop concurrently, resulting in strong associations that

align with technology acceptance theory (Davis, 1989; Venkatesh & Davis, 2000). These correlations suggest structural interdependence rather than redundancy of constructs. Conversely, ethical and professional concerns show a relatively moderate correlation with AI adoption ($r = 0.777$). This implies that while auditors are aware of risks such as bias, privacy, and accountability, these concerns serve more as contextual limitations than as primary motivators for adoption. In highly regulated settings like Saudi Big Four firms, ethics influences the extent and intensity of AI integration rather than directly determining adoption, highlighting its dual role as both a governance tool and a potential barrier to adoption.

Table 4: Correlation Analysis

Correlations						
		PU	PEOU	OR	Ethical	AI_Adoption
PU	Pearson Correlation	1	.941**	.926**	.810**	.956**
	Sig. (2-tailed)		.000	.000	.000	.000
	N	300	300	300	300	300
PEOU	Pearson Correlation	.941**	1	.949**	.843**	.949**
	Sig. (2-tailed)	.000		.000	.000	.000
	N	300	300	300	300	300

Correlations						
		PU	PEOU	OR	Ethical	AI_Adoption
OR	Pearson Correlation	.926**	.949**	1	.819**	.930**
	Sig. (2-tailed)	.000	.000		.000	.000
	N	300	300	300	300	300
Ethical	Pearson Correlation	.810**	.843**	.819**	1	.777**
	Sig. (2-tailed)	.000	.000	.000		.000
	N					
AI_Adoption	Pearson Correlation	.956**	.949**	.930**	.777**	1
	Sig. (2-tailed)	.000	.000	.000	.000	
	N	300	300	300	300	300

** . Correlation is significant at the 0.01 level (2-tailed).

6.5 Regression

A combined influence of PU, PEOU, OR, and Ethical concerns on AI Adoption was computed by conducting regression analysis in Table 5. 8.97.0% of the variance in AI Adoption was explained by the independent variables by the model summary, which had $R = 0.970$ and $R^2 = 0.941$. This large value of R^2 indicates that the model fits the data.

Table 5: Regression

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.970 ^a	0.941	0.940	0.203

a. Predictors: (Constant), PU, PEOU, OR, Ethical and Professional concerns

Table 6 shows the outcomes of ANOVA, the general significance of the regression model. The calculated values ($F = 1178.843$ and $p = .000$) mean that the model is highly significant. The independent variables (PU, PEOU, OR and ethical and professional concerns) strongly impact the dependent variable in this model.

Table 6: ANOVA

ANOVA						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1 94.570	4	48.642	1178.843	0.000 ^b
	Residual	12.173	295	0.041		
	Total	206.742	299			

a. Dependent Variable: AI_Adoption

b. Predictors: (Constant), PU, PEOU, OR, Ethical and Professional concerns

Table 7 shows the results of linear regression. The coefficients showed the personal contribution of each predictor to AI Adoption. The significant positive effect was found on PU, PEOU, ethical and professional concerns = 0.000 i.e. ($p < 0.05$), and OR = 0.002 ($p < 0.05$). Ethical concerns were influential by having a major negative impact on the AI Adoption. The regression analysis offers a detailed insight into how each predictor affects AI adoption. Perceived usefulness has the most significant standardized impact ($\beta = 0.531$, $p < 0.001$), highlighting that auditors' confidence in AI's ability to enhance performance is the main factor driving adoption decisions. Perceived ease of use

also has a notable positive impact ($\beta = 0.407$, $p < 0.001$), indicating that ease of use plays a crucial role in influencing acceptance behavior. Organizational readiness shows a positive but relatively moderate effect ($\beta = 0.150$, $p = 0.002$), underscoring the importance of infrastructure and managerial support in enabling AI integration. Conversely, ethical and professional concerns have a statistically significant negative impact ($\beta = -0.119$, $p < 0.001$), suggesting that ethical risks serve as limiting factors that could moderate the extent or scope of AI implementation in highly regulated audit settings, such as Big Four firms in Saudi Arabia.

Table 7: Coefficients

Coefficients ^a						
Model B		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		Std. Error	Beta			
1	(Constant)	0.076	0.061	—	1.253	0.211
	PU	0.531	0.044	0.531	12.100	0.000
	PEOU	0.408	0.055	0.407	7.413	0.000
	OR	0.152	0.048	0.150	3.170	0.002
	Ethical	-0.109	0.024	-0.119	-4.499	0.000
a. Dependent Variable: AI_Adoption_in_internal_auditing						

6.6 Discussion

This study contributes to the global understanding of AI adoption in auditing by situating Technology Acceptance Model (TAM) constructs within a highly regulated and digitally transforming emerging market context. While prior research in Western and Asian settings confirms the positive influence of perceived usefulness and ease of use, the particularly strong relationships observed here reflect the institutional structure of Big Four firms in Saudi Arabia, where AI integration is strategically embedded and aligned with Vision 2030. Unlike decentralized audit environments, Big Four firms operate within globally standardized technological systems that reinforce the interdependence between perceived usefulness, ease of use, and organizational readiness. Accordingly, the findings should be interpreted not only as behavioral acceptance patterns but also as evidence of institutional digital maturity.

According to research, PU is an important indicator in technology adoption by individuals

in auditing and professional services (Almgrashi & Mujalli, 2025). AI enhance risk assessment and fraud detection and analysis of auditors, enabling auditors to cease working manually and rely on more strategic work. According to the recent study conducted by Bracci et al. (2025), auditors whose performance seemed to be positively impacted by AI were more they consider adopting it, with the focus on the correlation of technological tools and professional goals. More importantly, only a small amount of the existing literature covered Western or multinational settings, so little evidence was found on the adoption of AI in the Middle Eastern professional setting, including Saudi Arabia (Alhazmi et al., 2025). Although the effect of PU was moderating, there were not many studies that considered the interaction of perceived benefits with organizational readiness or ethical restraints, which might be used to modify adoption rates.

This current study discovered that Saudi Big Four auditors had a general willingness to view AI as a very useful technology: 59.7% of them strongly

believed that AI helped to enhance efficiency of the audit, and 54.3% believed that AI helped to speed up the completion of tasks. The final results ($r = 0.956$) obtained by use of correlation and regression ($p < 0.05$) supported that PU had a significant effect on the adoption of AI. These conclusions could be considered as expected overall, yet they were applied to the Saudi context, which confirmed that PU was one of the key factors of AI adoption. Thus, H1 was accepted.

The degree to which technology was perceived to be easy, user friendly, and with minimum effort was reflected in PEOU. Complexity in auditing may result in the adoption of tools in situations where they were profitable (Alharbi, 2023). However, the more receptive auditors were to AI in cases where the integration into the existing processes did not pose a problem, and the training requirements were low, and the learning curves were short. Studies have tended to assume that the user-friendliness of AI by itself caused adoption (Alhazmi et al., 2025). It also aligns with the result of this study, which showed that Saudi Big Four auditors strongly supported that AI tools were easy to implement, and 52.7% strongly supported that AI applications were user-friendly. The outcome of the correlation (0.949) and regression ($p < 0.05$) showed significant influence of PEOU on AI adoption is significant. Such findings supported the overall expectations and offered empirical support in a Saudi context, which means that ease of use was a key facilitator of AI adoption. Therefore, H2 was accepted

OR viewed as technological infrastructure, managerial, training programs, and strategic alignment in firms (Benhayoun et al., 2025). According to Annh et al. (2024), firms that possess good infrastructure and have a systematic support experienced less adoption barriers and performance benefits due to AI (Anh et al., 2024). AI integration in audit firms was especially significant, and OR was necessary to coordinate activities of different departments, provide data security, and ensure compliance with professional ethical considerations (Ghozi, 2024). More importantly, the previous studies paid much attention to resources and little to the organizational culture, governance, and change management as change moderators. Even the professionally equipped firms failed occasionally because of the lack of clarity in the responsibility or because they lacked professional training, which

means that OR should be taken into consideration together with behavioral and ethical aspects (Bruno & Skoglund, 2024; Eyada).

The findings also align with the fact that Saudi Big Four firms tended to offer adequate support or having an adequate OR. Auditors were strongly committed to the fact that infrastructural support was present in firms, 51% were strongly convinced that training programs were provided. The results showed that OR had a high level of correlation with AI adoption ($r = 0.930$, $p < 0.01$) and the regression coefficient ($p = 0.002$) was significant. Thus, establishing the positive role of OR. Thus, H3 was accepted.

Munoko et al. (2020) defined the ethical and professional issues, such as algorithmic auditing, privacy, confidentiality and accountability, as obstacles while implementing AI in auditing. Such problems may erode the trust and decrease confidence in AI results and manipulate the dependence of auditors on automated solutions (Munoko et al., 2020). Although usefulness and ease of use were factors in adoption, ethical risks played an important limitation factor that may inhibit adoption, especially when used in a regulated and professionalised setting. Importantly, ethical issues were frequently theorized in past studies, and there was little empirical data on their quantitative influence (Khan et al., 2024; Koshiyama et al., 2024).

The findings also align with the existing research that there is an issue of data privacy and accountability that inhibited adoption (Khan et al., 2024; Zhang et al., 2023). Ethical issues were ranked as moderately and significantly associated with AI adoption ($r = 0.777$) and a negative regression coefficient ($\beta = -0.119$). The findings indicated the relevance of ethical governance and professional protection in supporting accountable AI applications in Saudi Big Four firms. Therefore, H4 was accepted

7. Conclusion

The use of AI in internal auditing is a major change in the ways in which audit functions accelerate the efficiency and control over challenges in auditing to generate quick and accurate results. The successful implementation relies on various technological, organizational and ethical aspects which determine success in the implementation. Sustainable digital

transformation in the audit practices is ensured through ensuring that the systems are user-friendly, have high institutional preparation, and continuous professional development. Meanwhile, professional integrity and trust towards an organization must be preserved through wise leadership, Information security, and transparency. The balanced strategy, balancing innovative tactics with the ability to meet the requirements of regulations and organizational competencies, can help to be competitive and resilient in the changing audit environment of Saudi Big Four firms.

This research offers significant contributions across theoretical, practical, and organizational dimensions. From a theoretical standpoint, it enhances the Technology Acceptance Model (TAM) by integrating factors such as organizational readiness and ethical and professional issues as contextual influences on the adoption of AI in internal auditing. This enhancement provides a more institutionally based framework for comprehending technology acceptance in highly regulated audit settings, particularly in emerging markets like Saudi Arabia. On a practical level, the study delivers actionable insights for audit firms aiming to incorporate AI into their internal audit processes, emphasizing the need to bolster infrastructure, managerial backing, and professional training, while also proactively addressing ethical and accountability issues. At the organizational level, the research underscores the strategic importance of aligning AI initiatives with governance expectations and national digital transformation goals, especially for Big Four firms that operate within both global professional standards and local regulatory environments.

7.1 Strengths and Limitations

The strength of this study is that it determined practical insights from internal auditors working in the Big Four firms in Saudi context because there existed a literature gap in the adoption of AI in internal auditing in the context of Saudi Big firms' implementation. The study also implemented a TAM model by combining organizational readiness and ethical issues, which provided a more thorough framework of understanding that factors contribute to the AI adoption in internal auditing. The study limited the use of qualitative findings due to investigating practical insights from auditors in Saudi Big Four Firms.

7.2 Future Considerations

Longitudinal and mixed-method studies should be conducted in future to evaluate the change in AI acceptance and use over time, which can give an understanding of the changing behaviour of auditors and organisational performance of Big Four firms in Saudi Arabia. In addition, cross-country comparisons of AI use in internal audit should also be conducted in future studies to produce cross-cultural views and to increase the degree of generalizability regarding the usage of AI in the internal auditing processes.

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• Author Biography

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