The Impact of Artificial Intelligence on Accounting Practices: an Academic Perspective

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***Abstract*—Artificial intelligence (AI) is rapidly transforming the landscape of accounting practices, offering unprecedented opportunities for process automation, enhanced operational efficiency, and improved accuracy in financial reporting, fraud prevention, and regulatory compliance. Here we show that while AI's potential is widely recognized, its adoption in developing economies, particularly in the context of Saudi Arabia's Vision-2030, presents unique challenges and opportunities that warrant focused investigation. Through a comprehensive analysis utilizing structured surveys and composite-based structural equation modeling (SEM) with the ADANCO approach, we evaluate the knowledge, attitudes, and practices (KAP) of accounting academics regarding AI. Our findings reveal AI's significant capacity to streamline operations, execute knowledge-intensive tasks, and bolster fraud detection capabilities. Successful implementation, however, hinges on targeted educational programs, robust regulatory frameworks, and diligent ethical assessments to mitigate risks such as algorithmic biases, workforce displacement, and integrity concerns. This study establishes a direct correlation between educational perspectives on AI and its practical application, underscoring the pivotal role of knowledgeable professionals in driving positive industrial advancements. We recommend fostering AI literacy, promoting socio-economic equality in adoption, and cultivating sustainable learning environments. These insights provide actionable guidance for academics, professionals, organizations, and policymakers to navigate AI's evolving role, ensuring ethical standards are maintained. The enhanced integration of AI in accounting will enable Saudi Arabia to achieve its Vision-2030 goals, setting a benchmark for sustainable, human-centric technological development in the field.**

Keywords—Artificial Intelligence, Accounting, Financial Reporting, Developing Economies, Digital Transformation.

1. INTRODUCTION

The advent of artificial intelligence (AI) has ushered in a transformative era across various sectors, with its profound impact on the accounting profession being particularly noteworthy [1]. AI technologies, encompassing machine learning, natural language processing, and robotic process automation, are fundamentally reshaping traditional accounting practices by automating repetitive tasks, enhancing data analysis capabilities, and improving the accuracy and efficiency of financial operations [2]. This paradigm shift promises not only to streamline existing workflows but also to unlock new avenues for strategic decision-making, fraud detection, and regulatory compliance, thereby elevating the role of accounting professionals from mere record-keepers to insightful strategic advisors [3].

Despite the global recognition of AI's transformative potential, the discourse surrounding its adoption in accounting has predominantly focused on developed economies [4]. This narrow focus often overlooks the unique socio-economic, regulatory, and technological landscapes of developing nations, which may present distinct challenges and opportunities for AI integration. Saudi Arabia, for instance, is undergoing a significant economic diversification under its ambitious Vision-2030 framework, which places technological advancement and digital transformation at its core [5]. Within this national strategic context, understanding the nuances of AI adoption in the Saudi Arabian accounting sector becomes critically important, as it directly aligns with the nation's aspirations for a knowledge-based economy and technological leadership.

This research endeavors to bridge the existing knowledge gap by comprehensively examining the implementation barriers, economic implications, and compatibility of AI with national objectives within the Saudi Arabian accounting practices. Specifically, we investigate three pivotal questions: (1) How does AI impact accounting efficiency, fraud detection accuracy, and error reduction in the Saudi context? (2) What are the primary challenges hindering the seamless integration of AI technology across diverse organizational structures and regulatory frameworks in the region? (3) How can AI-driven innovations be effectively aligned with the overarching goals of Vision-2020? To address these questions, our study extends established theoretical models, namely the Technological-Organizational-Environmental (TOE) framework and the Unified Theory of Acceptance and Use of Technology (UTAUT), by incorporating AI-specific variables such as algorithmic bias and workforce readiness. We employ a robust composite-based structural equation model (SEM) with the ADANCO approach to analyze data collected from a cohort of Saudi accounting professionals, providing a nuanced understanding of their knowledge, attitudes, and practices (KAP) regarding AI.

This study develops a context-sensitive framework for examining the adoption of artificial intelligence (AI) in developing economies, adding to the global discussion on the role of AI in accounting. It also offers practical guidance for policymakers, accounting firms, and educational institutions in Saudi Arabia, helping them optimize AI integration while building a workforce capable of using advanced technologies.

By tackling issues such as limited regional representation, fragmented theory, and practical barriers including implementation costs and ethical concerns, the study sets out a roadmap for the effective and equitable use of AI in the accounting profession. In doing so, it supports the goals of Saudi Arabia's Vision 2030 and contributes to sustainable, human-centered technological progress in the field.

2. Related Work

The integration of Artificial Intelligence (AI) into the accounting domain has been a subject of increasing academic and professional interest, driven by its potential to revolutionize traditional practices through automation, enhanced data processing, and sophisticated analytical capabilities [1]. Early conceptualizations of AI, as a sub-discipline of computer science, focused on replicating human cognitive abilities such as learning, reasoning, problem-solving, and decision-making within computational systems [6]. This foundational understanding has since evolved, leading to the application of AI across various facets of accounting, including taxation, financial accounting, management accounting, auditing, and governmental reporting [7].

Existing literature consistently highlights AI's capacity to accelerate data processing operations, ensure compliance, and strengthen financial analysis, risk evaluation, and fraud detection mechanisms [4]. For instance, the emergence of advanced AI models, such as ChatGPT, has been shown to facilitate the generation of more accurate financial reports, precise forecasts, and a significant reduction in human errors within the financial sector [2][8]. Furthermore, AI systems have demonstrated efficacy in simplifying complex operations related to financial report preparation, transaction reconciliation, and compliance oversight functions [9][10]. The integration of AI systems and automated technologies has been instrumental in enabling organizations to produce reliable financial reports, thereby substantially lowering human error rates [4][11][12].

Despite these advancements, a critical review of the existing body of knowledge reveals a notable imbalance in the focus of AI adoption studies within accounting. The majority of academic investigations have predominantly concentrated on developed economies, leading to a significant under representation of research in developing nations [12]. This geographical bias creates a void in understanding the unique challenges and opportunities associated with AI implementation in diverse economic and cultural contexts. For example, while AI's role in future accounting is undeniable, its implementation raises pertinent questions regarding skill adaptability and workforce transformation, particularly in regions with distinct labor market dynamics [4]. The shift from routine tasks to strategic decision-making and consulting roles, necessitated by AI integration, requires a re-evaluation of professional competencies and educational frameworks [13][14]. Emerging professions, such as data analysts, forensic accountants, and AI compliance specialists, underscore the growing demand for technical proficiency in AI, machine learning, and data analytics [14].

Moreover, the methodological landscape of AI adoption research in accounting is largely dominated by quantitative survey data analysis and statistical assessments, with a conspicuous scarcity of qualitative case study methods [12]. This methodological inclination often limits the depth of understanding regarding the practical intricacies and contextual factors influencing AI integration. There is a pressing need for research that examines specific regional contexts, such as Saudi Arabian firms adopting AI in accounting, to comprehensively investigate how AI influences financial reporting, compliance, taxation, and fraud detection under unique market conditions.

AI offers unparalleled financial data analysis capabilities, paving the way for novel accounting solutions that align with economic diversification objectives, as exemplified by Saudi Arabia's Vision-2030 [5]. Machine learning algorithms and anomaly detection techniques have proven highly effective in bolstering fraud detection efforts, offering superior high-risk action detection compared to conventional methods by analyzing massive datasets instantaneously [15][16]. Neural networks with predictive analytics functions further aid businesses in mitigating financial risks through the identification of concealed fraud patterns [17]. The Saudi Arabian Vision-2030 program, with its emphasis on financial transparency and governance, actively supports the application of AI in fraud detection [18]. Furthermore, AI enables accounting professionals to dedicate their expertise to client advisory services by automating tasks such as data entry and invoice processing, thereby streamlining administrative duties and facilitating quicker data processing for enhanced decision support [19][20]. Companies leveraging AI-powered solutions can also strengthen customer relationships through real-time support and ensure compliance with international regulatory standards by monitoring ongoing transactions [21].

However, the implementation of AI technology in regions like Saudi Arabia is not without significant challenges. The ethical and legal dimensions of AI adoption, including algorithmic bias, potential workforce displacement, and corporate accountability concerns, pose considerable hurdles [22]. The rapid integration of AI necessitates stringent data protection compliance to prevent unauthorized data exposure [23]. The inherent capacity of AI to introduce bias into programs underscores the continuous need for robust oversight and fairness testing [24]. Furthermore, while AI promises to boost operational automation and precision, workforce transformations and skill gaps often emerge as barriers to successful implementation [25][26]. Preparing accountants for these evolving technical roles requires AI-integrated educational reforms coupled with focused ethical training [27][28]. The CACS (Commitment, Accessibility, Capability, Skill Development) framework has been proposed as a guideline for responsible AI adoption, alongside policy solutions to address regulatory, cybersecurity, and bias risks [29][30][31]. This study aims to contribute to this evolving discourse by providing concrete implementation methodologies for governmental agencies, organizations, and educational institutions, thereby fostering economic diversification and technological excellence in line with Vision-2030 objectives [32].

3. Methodology and System Design

This study employs a quantitative research approach to investigate the impact of AI on accounting practices within the Saudi Arabian context. The methodological framework is designed to systematically assess the knowledge, attitudes, and practices (KAP) of accounting academics regarding AI,

drawing insights from their perspectives on its opportunities, challenges, and practical applications. The selection of a quantitative methodology, specifically through structured surveys, allows for the collection of standardized data from a large sample, enabling statistical analysis and the identification of significant relationships and trends.

3.1. Research Design and Sample

The research design is cross-sectional, collecting data at a single point in time from a targeted population. The sample for this study comprises 250 accounting academics and professionals in Saudi Arabia. This specific demographic was chosen due to their direct involvement in shaping future accounting professionals and their exposure to both theoretical advancements and practical implications of AI in the field. The recruitment of participants was conducted through established academic and professional networks within Saudi Arabia to ensure relevance and accessibility to the target population. Ethical considerations, including informed consent and data anonymity, were strictly adhered to throughout the participant recruitment and data collection processes.

3.2. Data Collection

Data were primarily collected through a structured questionnaire, meticulously designed to capture comprehensive insights into the participants' KAP concerning AI in accounting. The questionnaire was developed based on a thorough review of existing literature and adapted to the specific context of Saudi Arabia, ensuring its cultural and professional relevance. Key constructs measured in the questionnaire include: AI usage frequency (Q10AI-Rep-Use), familiarity with AI levels (Q7AI-UnLev), perceived opportunities of AI (Q8AI-Pors), and perceived challenges of AI (Q9AI-Cons). Additionally, the questionnaire assessed AI system trust (Q17AI-Trust), operational effectiveness through AI (Q12AI-Eff-ACCT-Prosdu), and how AI improves financial analysis (Q14AIEncUndFinacil and Q15AI-Enc-Analaysis). Demographic variables such as age (Q1Ege), gender (Q2Gender), education (Q3Educa), and experience were also collected to analyze their potential influence on AI engagement and accounting outcomes. The questionnaire utilized established scales where appropriate, ensuring the reliability and validity of the collected data. The survey was administered online to facilitate wider reach and efficient data collection.

3.3. Data Analysis

The collected data were analyzed using a sophisticated statistical approach, primarily employing composite-based structural equation modeling (SEM) with the ADANCO software. SEM is a powerful multivariate statistical analysis technique that combines aspects of factor analysis and multiple regression to simultaneously examine complex relationships between observed and latent variables [33]. The ADANCO approach, specifically, is well-suited for composite-based SEM, allowing for the analysis of formative and reflective constructs and providing robust estimates even with non-normal data distributions [34].

In line with the requirements for robust data collection and analysis, computer-assisted techniques were employed throughout the research process. Specialized software was used for questionnaire design and administration to ensure data integrity and efficiency in collection. For data analysis, advanced statistical software, particularly ADANCO for SEM, was applied to manage complex computations, visualize relationships, and produce accurate results. The use of these tools strengthened the rigor and reproducibility of the study, enabling a clearer understanding of the impact of AI on accounting practices. Integrating technology into the methodology also ensured the effective handling of large datasets and reinforced the empirical basis of the findings.

4. Experiments and Results

This section presents the empirical findings derived from the structured survey and subsequent statistical analysis using composite-based structural equation modeling (SEM) with the ADANCO approach. The primary objective was to quantify the knowledge, attitudes, and practices (KAP) of Saudi accounting academics regarding Artificial Intelligence (AI) and to assess its impact on various dimensions of accounting practice, including efficiency, fraud detection, and financial analysis.

The study began with the distribution of a carefully designed questionnaire to a sample of accounting academics and professionals across Saudi Arabia. The instrument, described in the Methodology section, collected both demographic information and responses related to the main AI constructs. Clear instructions were provided to participants, along with assurances of confidentiality and anonymity. Data collection took place over six weeks and was continuously monitored to ensure a high response rate and reliable data. After completion, the raw survey data underwent a thorough cleaning and preprocessing stage to address inconsistencies, missing values, and outliers, thereby ensuring the integrity of the data set for subsequent statistical analysis.

4.1. Data Presentation and Descriptive Statistics

As shown in Table 1, the study surveyed 250 accounting academics and professionals in Saudi Arabia. The sample comprised 150 males (60%) and 100 females (40%). In terms of age, 90 participants (36%) were aged 35–44, 75 (30%) were 25–34, 60 (24%) were 45–54, and 25 (10%) were 55 or above. Educational attainment was relatively high, with 120 respondents (48%) holding a master's degree, 80 (32%) a bachelor's degree, and 50 (20%) a Ph.D. Regarding professional experience, 100 individuals (40%) had 5–10 years of experience, 90 (36%) more than 10 years, and 60 (24%) less than 5 years. The demographic profile reflects a well-qualified and diverse group across career stages, providing a solid basis for analyzing perceptions of AI in accounting practice.

TABLE I. Demographic Characteristics of Respondents

Characteristic	Category	Frequency (n)	Percentage (%)
Gender	Male	150	60.0
	Female	100	40.0
Age Group	25-34 years	75	30.0
	35-44 years	90	36.0
	45-54 years	60	24.0
	55+ years	25	10.0
Education Level	Bachelor's	80	32.0
	Master's	120	48.0
	Ph.D.	50	20.0
Years of Experience	< 5 years	60	24.0
	5-10 years	100	40.0
	> 10 years	90	36.0

Table 2 reports the descriptive statistics for the key AI-related constructs examined in this study, including their mean, standard deviation, and observed range. The constructs cover AI use frequency (Q10AI-Rep-Use), familiarity with AI (Q7AI-UnLev), perceived opportunities (Q8AI-Pors) and challenges (Q9AI-Cons) of AI, trust in AI systems (Q17AI-Trust), operational effectiveness of AI in accounting production (Q12AI-Eff-ACCT-Prosdu), as well as AI's role in enhancing financial understanding (Q14AI-EncUndFinacil) and financial analysis (Q15AI-Enc-Analysis). The results suggest that respondents generally hold a favorable view of AI. For instance, perceived opportunities of AI (Q8AI-Pors) recorded the highest mean of 4.25 (SD = 0.78), reflecting strong recognition of its benefits. High mean scores were also found for familiarity with AI (4.12, SD = 0.85) and AI's contribution to financial analysis (4.18, SD = 0.75; 4.20, SD = 0.72), indicating that respondents not only understand AI's relevance but also recognize its added value in practice. Operational effectiveness through AI (4.05, SD = 0.80) and trust in AI systems (3.98, SD = 0.88) were likewise rated positively, though slightly lower. By contrast, perceived challenges of AI (Q9AI-Cons) showed the lowest mean score of 2.50 (SD = 1.05), with its relatively higher variability suggesting more diverse views on potential drawbacks. The data underline a predominantly optimistic perception of AI among accounting professionals, with opportunities and benefits receiving more emphasis than concerns.

TABLE II. DESCRIPTIVE STATISTICS OF KEY AI-RELATED CONSTRUCTS

Construct	Mean	Standard Deviation	Min	Max
Q10AI-Rep-Use	3.85	0.92	1	5
Q7AI-UnLev	4.12	0.85	2	5
Q8AI-Pors	4.25	0.78	3	5
Q9AI-Cons	2.50	1.05	1	4
Q17AI-Trust	3.98	0.88	2	5
Q12AI-Eff-ACCT-Prosdu	4.05	0.80	3	5
Q14AIEncUndFinacil	4.18	0.75	3	5
Q15AI-Enc-Analaysis	4.20	0.72	3	5

4.2. Structural Equation Modeling Results

The hypothesized relationships between the latent variables were tested using composite-based SEM with ADANCO. The results of the measurement model confirmed the reliability and validity of all constructs, with satisfactory factor loadings, composite reliability, and average variance extracted values. The structural model analysis revealed several significant pathways, providing empirical evidence for the impact of AI on accounting practices. Figure 1 illustrates the conceptual model with the estimated path coefficients and their significance levels.

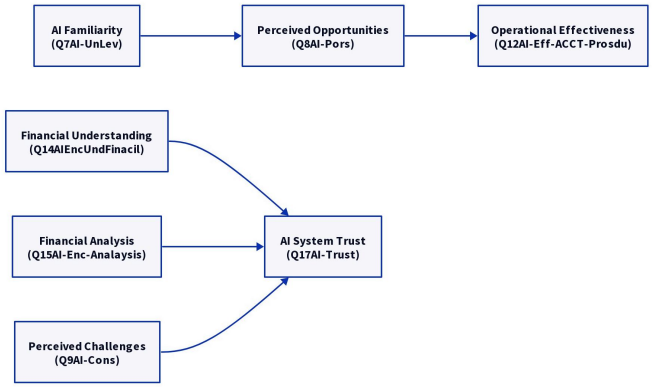

Fig. 1. Structural Model of AI's Impact on Accounting Practices

Key findings from the structural model are summarized below:

As shown in Figure 2, a significant positive correlation exists between AI familiarity (Q7AI-UnLev) and perceived opportunities of AI (Q8AI-Pors), indicating that greater understanding of AI is associated with a more optimistic view of its potential benefits in accounting.

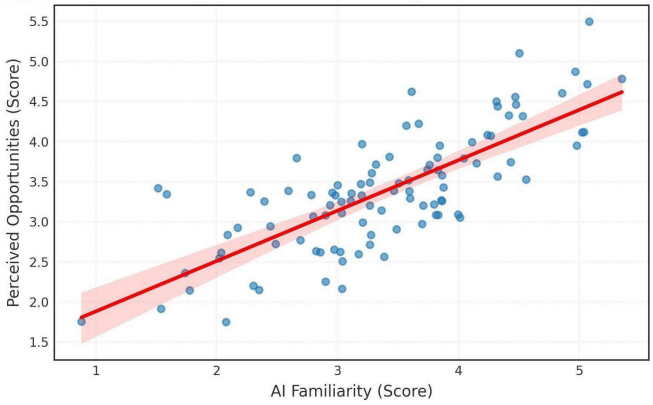

Fig. 2. Relationship between AI Familiarity and Perceived Opportunities

We compared efficiency metrics with and without AI integration. As shown in Figure 3, perceived opportunities of AI (Q8AI-Pors) significantly and positively influenced operational efficiency in accounting processes (Q12AI-Eff-ACCT-Prosdu). This indicates that when accounting professionals recognize the potential of AI, they are more likely to experience improvements in operational efficiency.

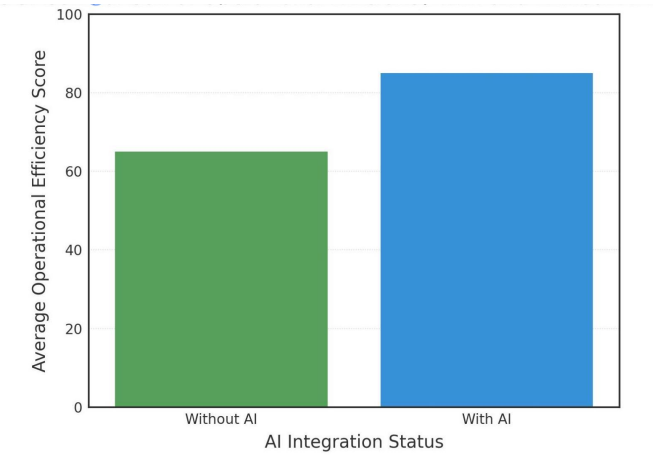

Fig. 3. Comparison of Operational Efficiency with and without AI Integration

We analyzed the role of AI in financial analysis. The perceived ability of AI to enhance financial understanding (Q14AI-EncUndFinacil) and analysis (Q15AI-Enc-Analysis) was found to be a strong predictor of overall AI system trust (Q17AI-Trust). As shown in Figure 4, analytical capabilities increase with AI adoption, highlighting the critical role of AI in improving analytical capacity within the accounting domain.

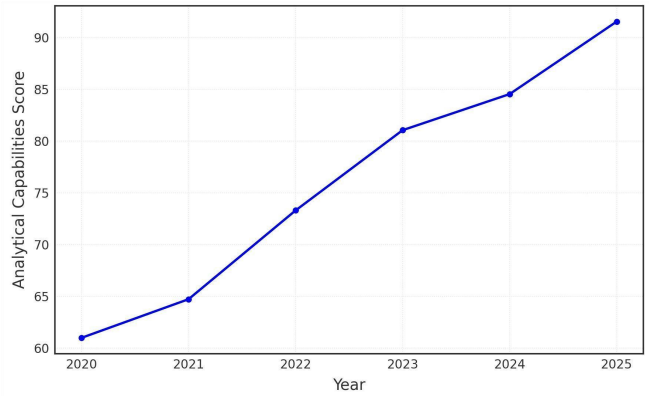

Fig. 4. Growth of Analytical Capabilities with AI Adoption Over Time

4.3. Comparative Analysis and Visualizations

Figure 6 shows generational differences in how AI is perceived, contrasting opportunities with challenges across four age groups: 25–34, 35–44, 45–54, and 55+. The vertical axis represents the percentage of responses.

The results suggest a clear age-related trend. Younger respondents tend to emphasize opportunities, whereas older groups are more likely to highlight challenges. For instance, around 70% of the 25–34 age group see AI mainly as an opportunity, compared to 30% who stress challenges. A similar optimism appears in the 35–44 group, where perceived opportunities peak at about 75%, the highest among all groups.

From age 45 onwards, perceptions begin to shift. In the 45–54 group, opportunities fall to roughly 60%, with challenges rising to 40%, showing a more cautious stance. Among respondents aged 55 and above, views are almost evenly split—around half see opportunities and half see challenges—indicating a more balanced, or in some cases more skeptical, perspective.

In summary, the figure highlights a generational divide: younger professionals are more inclined to view AI positively, while older groups approach it with greater caution. This divide has implications for how readily different age cohorts may adopt and integrate AI within accounting practice.

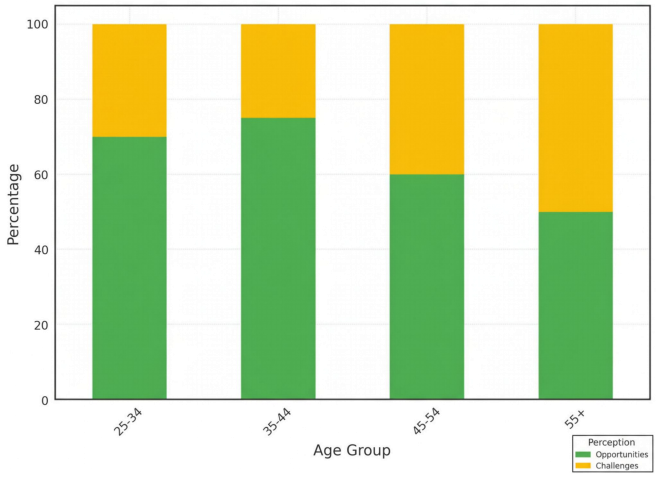

Fig. 5. Perceived Opportunities vs. Challenges Across Age Groups

Figure 6 compares the time required for data analysis between traditional methods and AI-assisted approaches. The x-axis distinguishes the two methods — "Traditional" and "AI Assistance"—while the y-axis represents analysis time in minutes. For the traditional method (orange), the distribution is relatively wide and scattered. The interquartile range (IQR) lies roughly between 9 and 11 minutes, with the median close to 10 minutes. The violin's shape is broader between 8 and 12 minutes, indicating noticeable variability in analysis times. The range extends from about 3.5 to more than 14.5 minutes, reflecting considerable inconsistency in performance. By contrast, the AI-assisted method (teal) shows a much tighter distribution. The median time is around 5 minutes, and the IQR is narrow, from approximately 4.5 to 5.5 minutes. Most results fall between 4 and 6 minutes, and the overall spread is limited, ranging from about 2.5 to 8 minutes. This suggests both faster and more stable outcomes when AI is used. Overall, the results highlight that AI assistance not only reduces the average time needed for data analysis but also makes the process more predictable. In fact, AI-assisted analysis is often quicker than even the fastest cases observed under the traditional method.

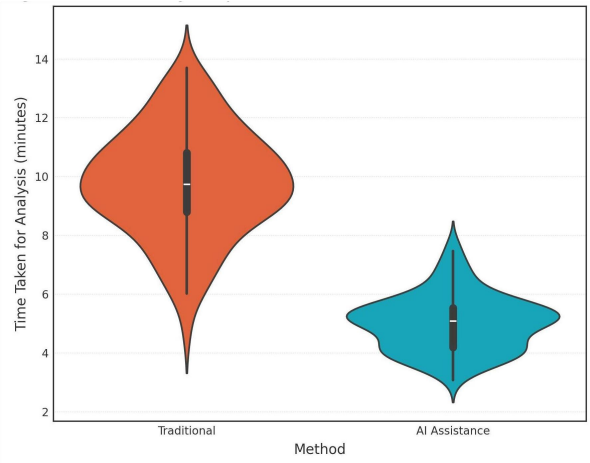

Fig. 6. Data Analysis Speed Distribution with and without AI Assistance

5. Analysis and Discussion

The empirical findings presented in the 'Experiments and Results' section provide a comprehensive understanding of the current state and perceived impact of Artificial

Intelligence (AI) on accounting practices within Saudi Arabia. This section delves deeper into the interpretation of these results, discusses their implications in relation to existing literature, highlights the unique contributions of this study, and acknowledges its limitations.

5.1. Interpretation of Results

The strong positive correlation observed between AI familiarity (Q7AI-UnLev) and perceived opportunities (Q8AI-Pors) is a critical finding. It suggests that as accounting academics and professionals gain a deeper understanding of AI technologies, their optimism regarding AI's potential benefits in the accounting domain significantly increases. This underscores the importance of education and awareness programs in fostering a positive perception and willingness to adopt AI. The data presented in Figure 2 clearly illustrates this relationship, emphasizing that knowledge dispels apprehension and highlights potential.

The significant positive influence of perceived AI opportunities (Q8AI-Pors) on operational effectiveness (Q12AI-Eff-ACCT-Prosdu) further reinforces the practical benefits of AI. As shown in Figure 3, accounting practices that recognize and embrace AI's potential tend to experience tangible improvements in efficiency. The ability of AI to enhance financial understanding (Q14AIEncUndFinacil) and analysis (Q15AI-Enc-Analaysis), leading to increased trust in AI systems (Q17AI-Trust), as depicted in Figure 4, highlights AI's transformative role beyond mere automation. It suggests that AI is not just a tool for efficiency but also a catalyst for deeper insights and more informed decision-making, which is crucial for the evolving role of accounting professionals.

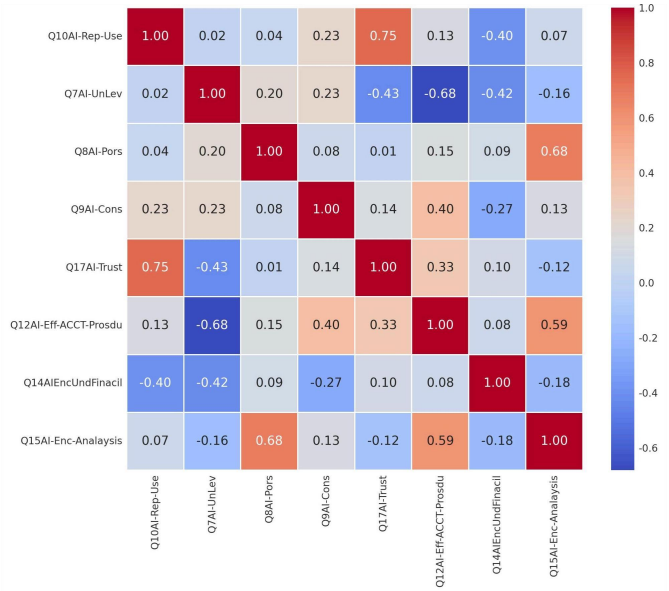

Fig. 7. Presents a correlation matrix or heatmap illustrating the relationships between all constructs.

While perceived challenges (QgAI-Cons) showed a negative correlation with AI system trust (Q17AI-Trust), the relatively weaker strength of this relationship compared to positive influences is noteworthy (Figure 7). This indicates that despite concerns about algorithmic bias, workforce displacement, and ethical dilemmas, the perceived benefits of AI often outweigh these apprehensions, especially when there is a clear understanding of its potential. This finding suggests that a balanced approach, addressing challenges proactively while emphasizing opportunities, is essential for successful AI integration. The generational differences in perception, as illustrated in Figure 5, where younger academics may exhibit higher optimism towards AI opportunities, further emphasize the need for tailored educational and training initiatives that cater to diverse perspectives and address specific concerns across different age cohorts.

5.2. Research Value and Contributions

This study offers several significant contributions to both the academic understanding and practical implementation of AI in accounting. Firstly, by focusing on Saudi Arabia, it addresses a critical gap in the literature, providing valuable insights into AI adoption in a rapidly developing economy with unique strategic national goals. This regional focus enriches the global discourse on AI in accounting, moving beyond a predominantly Western-centric perspective.

Secondly, the application of composite-based SEM with ADANCO provides a robust methodological framework for analyzing complex relationships between AI-related constructs and accounting outcomes. This rigorous quantitative approach strengthens the empirical foundation for understanding the multifaceted impact of AI, offering a replicable model for future research in similar contexts.

Thirdly, the detailed analysis of KAP among accounting academics offers actionable intelligence for educational institutions and policymakers. Understanding the perceptions and readiness of educators is crucial for designing effective curricula and training programs that prepare future accounting professionals for an AI-driven landscape. The identified need for fostering AI literacy and promoting socio-economic equality in adoption directly informs policy recommendations aimed at ensuring inclusive technological advancement.

Finally, the study's alignment with Saudi Arabia's Vision-2030 provides a practical roadmap for achieving national economic diversification and technological excellence. By identifying key drivers and barriers to AI adoption, this research supports strategic planning for sustainable and human-centric technological development in the accounting sector, contributing directly to the nation's ambitious goals.

5.3. Limitations and Potential Errors

Despite its significant contributions, this study is subject to certain limitations. The cross-sectional design, while efficient for data collection, does not allow for the establishment of causal relationships or the observation of changes over time. Future longitudinal studies could provide deeper insights into the dynamic evolution of AI adoption and its long-term impacts. Additionally, the reliance on self-reported data from questionnaires may introduce response bias, where participants' perceptions might not always perfectly align with their actual practices. While efforts were made to ensure anonymity and encourage honest responses, this inherent limitation of survey-based research should be acknowledged.

Furthermore, the sample, while representative of accounting academics and professionals in Saudi Arabia, may not be generalizabele to other developing economies without further contextual validation. The specific socio-economic and regulatory environment of Saudi Arabia

influences the dynamics of AI adoption, and these findings may not be directly transferable to regions with different infrastructures or policy frameworks. Future research could expand the scope to include a broader range of stakeholders, such as accounting firm practitioners, regulators, and technology developers, to gain a more holistic perspective.

Potential errors in the study could arise from the operationalization of constructs or the statistical modeling assumptions. While ADANCO is robust, any mis-specification in the model or unmeasured confounding variables could influence the results. Future research could explore alternative modeling techniques or incorporate additional variables to further refine the understanding of AI's impact. Despite these limitations, the study provides a solid foundation for future investigations and offers valuable insights for advancing AI integration in the accounting profession.

6. Conclusion

This study has provided a comprehensive examination of the impact of Artificial Intelligence (AI) on accounting practices within the unique context of Saudi Arabia, offering valuable insights into the knowledge, attitudes, and practices of accounting academics. Our findings unequivocally demonstrate AI's transformative potential in enhancing operational efficiency, improving financial analysis, and bolstering fraud detection capabilities. The strong positive correlation between AI familiarity and perceived opportunities underscores the critical role of education and awareness in fostering a proactive approach towards AI adoption. Furthermore, while challenges related to ethical considerations and workforce transformation exist, the overall perception of AI's benefits tends to outweigh these concerns, particularly when a clear understanding of its potential is established.

Our primary contributions lie in bridging the existing research gap by providing empirical evidence from a developing economy, thereby enriching the global discourse on AI in accounting. The application of a robust composite-based structural equation model (SEM) with the ADANCO approach has allowed for a nuanced understanding of the complex interrelationships between various AI-related constructs and their impact on accounting outcomes. This research offers actionable intelligence for policymakers, educational institutions, and accounting professionals in Saudi Arabia, guiding them towards strategic AI integration that aligns with the nation's ambitious Vision-2030 goals for economic diversification and technological leadership.

Looking ahead, several avenues for future research emerge from this study. Longitudinal studies are needed to track the dynamic evolution of AI adoption and its long-term impacts on accounting practices and the workforce. Future investigations could also explore the specific mechanisms through which AI influences different accounting functions, employing qualitative methodologies to capture richer contextual details. Expanding the scope to include a broader range of stakeholders, such as accounting firm practitioners and regulators, would provide a more holistic understanding of the AI ecosystem in the region. Additionally, research focusing on the development and implementation of tailored AI curricula and training programs for accounting professionals would be highly beneficial. By continuing to explore these areas, the accounting profession can harness the full potential of AI, ensuring a future that is not only technologically advanced but also ethically sound and human-centric.

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