

The Future of Information Technology and Accounting: The Synergy of Artificial Intelligence and the Qualitative Characteristics of Accounting Information

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ABSTRACT

Understanding the role of artificial intelligence and information technology can contribute to improving accounting processes and addressing related challenges, and its importance in enhancing the quality of financial reporting is increasing day by day. The aim of this study is to examine the impact of artificial intelligence and information technology on improving the qualitative characteristics of accounting information. This study is a mixed-method (qualitative and quantitative), applied research conducted using descriptive-survey and exploratory data collection methods. The data were collected in 2024 through open-ended questionnaires and interviews with an expert panel consisting of university professors, PhD graduates in accounting, and professional specialists, and sampling continued until theoretical saturation was achieved. The findings of the study indicated that information technology has a positive and significant impact on all dimensions of the financial reporting environment, including relevance, faithful representation, comparability, predictability, feedback value, and timeliness. Furthermore, the use of artificial intelligence in the process of preparing financial information leads to increased security, accuracy, processing speed, cost reduction, completeness, clarity, comprehensiveness, and neutrality of information. In addition, artificial intelligence plays a significant role in enhancing qualitative characteristics of accounting information such as understandability and transparency. The findings also indicate interrelationships among the various dimensions of the study. These results can provide novel insights for a wide range of financial report users, including policymakers, investors, and creditors, and highlight the importance of the synergy between information technology and artificial intelligence in improving the quality of financial reporting.

Keywords: Future of Information Technology, Accounting, Artificial Intelligence Synergy, Qualitative Characteristics of Accounting Information.

Introduction

The rapid evolution of information technology and the emergence of artificial intelligence (AI) have fundamentally transformed the landscape of accounting and financial reporting in recent decades. Organizations operating in increasingly complex and dynamic environments are under growing pressure to produce high-quality, timely, and reliable financial information to support decision-making processes. In this context, the integration of advanced technologies into accounting systems has become not only a strategic necessity but also a key driver of innovation and competitiveness. The shift from traditional accounting practices toward technology-enabled systems has



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enabled organizations to enhance the efficiency, transparency, and accuracy of financial reporting processes, thereby improving the overall quality of accounting information (1, 2).

The concept of qualitative characteristics of accounting information has long been central to accounting theory and practice. These characteristics, including relevance, faithful representation, comparability, understandability, and timeliness, determine the usefulness of financial information for users such as investors, creditors, and policymakers. In the digital era, the expectations regarding these characteristics have significantly increased due to the growing reliance on real-time data and analytics. The advancement of information technology has played a crucial role in meeting these expectations by enabling the automation of accounting processes, improving data processing capabilities, and enhancing the accessibility of financial information (3, 4).

Artificial intelligence, as a transformative technological paradigm, has further accelerated these developments by introducing advanced capabilities such as machine learning, natural language processing, and predictive analytics into accounting systems. These capabilities allow organizations to process large volumes of structured and unstructured data, identify patterns, and generate insights that were previously unattainable through conventional methods. As a result, AI has the potential to significantly improve the accuracy, completeness, and predictive value of accounting information, thereby enhancing its qualitative characteristics (5, 6).

The adoption of artificial intelligence in accounting is not limited to improving data processing efficiency but extends to redefining the roles and responsibilities of accounting professionals. With the automation of routine tasks, accountants are increasingly focusing on higher-value activities such as analysis, interpretation, and strategic decision-making. This shift requires the development of new competencies and a deeper understanding of technological tools, highlighting the importance of aligning accounting education and professional training with emerging technological trends (7, 8).

In addition to artificial intelligence, the broader framework of digital transformation has significantly influenced financial reporting practices. Digital transformation encompasses the integration of various technologies, including cloud computing, blockchain, and advanced analytics, into organizational processes. These technologies enhance the transparency and traceability of financial transactions, improve internal control systems, and facilitate real-time reporting. Consequently, organizations can achieve higher levels of accountability and trust in financial reporting, which are critical for maintaining stakeholder confidence (9, 10).

The role of information technology governance and communication mechanisms is also critical in ensuring the effective implementation of technological innovations in accounting systems. Effective governance structures enable organizations to align their technological investments with strategic objectives, manage risks, and optimize resource utilization. Furthermore, communication mechanisms facilitate the dissemination of information across different organizational levels, thereby enhancing the performance of accounting information systems and contributing to the achievement of competitive advantage (11).

Despite the numerous benefits associated with the adoption of artificial intelligence and information technology, several challenges and risks must be addressed. These include issues related to data security, privacy, ethical considerations, and the potential for misuse of financial information. The implementation of AI-driven systems requires robust internal controls and regulatory frameworks to ensure the integrity and reliability of financial data. Moreover, the acceptance and effective use of these technologies depend on factors such as perceived usefulness, ease of use, and user trust, as highlighted by the Technology Acceptance Model (TAM) (12, 13).

Empirical studies have demonstrated that the adoption of information technology significantly enhances the quality of accounting information by improving its relevance, accuracy, and timeliness. For instance, research conducted in various organizational contexts indicates that advanced accounting technologies contribute to more efficient financial reporting processes and better decision-making outcomes. Similarly, the integration of artificial intelligence into accounting systems has been shown to improve internal controls, reduce errors, and enhance the overall quality of financial information (14, 15).

Furthermore, the relationship between accounting information quality and organizational performance has been widely recognized in the literature. High-quality accounting information enables investors and other stakeholders to make informed decisions, thereby improving market efficiency and organizational performance. Managerial ability also plays a significant role in leveraging high-quality information to enhance trading behavior and financial outcomes, indicating the importance of human factors in the effective utilization of technological innovations (16).

Recent studies have also emphasized the role of generative artificial intelligence and advanced data analytics in transforming financial reporting and sustainability practices. These technologies enable organizations to analyze complex datasets, generate predictive insights, and improve the quality of digital reporting. In particular, the integration of AI with sustainability reporting frameworks has been shown to enhance transparency and support the development of green internal control systems, thereby contributing to sustainable business practices (17).

In addition, trust in AI-based accounting systems has emerged as a critical factor influencing the quality of financial reporting. The effectiveness of AI applications depends not only on their technical capabilities but also on users' confidence in the reliability and integrity of the generated information. Building trust requires organizations to ensure transparency, accountability, and ethical use of AI technologies, as well as to provide adequate training and support for users (18).

The increasing application of artificial intelligence in cost analysis and financial management further highlights its potential to enhance organizational efficiency and decision-making. By automating complex calculations and providing real-time insights, AI enables organizations to optimize resource allocation, reduce operational costs, and improve financial performance. These capabilities are particularly valuable in highly competitive and rapidly changing business environments (19).

Moreover, global trends in science and technology indicate that the integration of advanced technologies into accounting systems will continue to accelerate in the coming years. Future-oriented strategies emphasize the importance of innovation, interdisciplinary collaboration, and continuous learning in adapting to technological changes. Higher education institutions and professional organizations play a crucial role in preparing the next generation of accountants to effectively utilize these technologies and address emerging challenges (20, 21).

The impact of artificial intelligence on small and medium-sized enterprises (SMEs) is also noteworthy, as these organizations increasingly adopt AI-based accounting information systems to enhance their operational efficiency and competitiveness. The use of communicative AI systems enables SMEs to improve financial reporting processes, enhance decision-making capabilities, and achieve sustainable growth in a competitive market environment (22).

In summary, the synergy between information technology and artificial intelligence represents a transformative force in the field of accounting, offering significant opportunities for improving the qualitative characteristics of accounting information and enhancing the effectiveness of financial reporting. However, realizing these benefits

requires addressing various technical, organizational, and ethical challenges, as well as fostering a culture of innovation and continuous improvement within organizations.

Therefore, the aim of this study is to investigate the impact of information technology and artificial intelligence on enhancing the qualitative characteristics of accounting information.

Methods and Materials

This study is classified, in terms of type, as a mixed-method (qualitative–quantitative) study; in terms of purpose, it is applied research; and in terms of data collection method, it is descriptive, survey-based, and exploratory. In the qualitative section, semi-structured interviews were employed to identify the main components of the study and to explore the in-depth perspectives of experts. This method provides flexibility in questioning and enables a more thorough exploration of experts' experiences and viewpoints, allowing the researcher to comprehensively and deeply understand complex and emerging phenomena in the field of accounting and the application of artificial intelligence. The qualitative statistical population consisted of university faculty members, PhD graduates in accounting, and accounting professionals. In the interview phase, sampling was conducted using judgmental and snowball sampling methods and continued until theoretical saturation was achieved to ensure sufficient diversity and depth of data.

In the quantitative and questionnaire-based section of the study, convenience sampling was used. It is noteworthy that a total of 250 questionnaires were distributed among the statistical sample, of which 187 completed questionnaires were ultimately collected and deemed suitable for analysis.

In the quantitative section, the questionnaire designed based on the components identified in the qualitative phase employed a five-point Likert scale consisting of "Strongly Agree (1)," "Agree (2)," "No Opinion (3)," "Disagree (4)," and "Strongly Disagree (5)." The use of a Likert scale reduces respondents' tendency toward central responses and improves the quality of the collected data. The temporal scope of the study was the year 2024, and data were collected through an expert panel, open-ended questionnaires, and interviews. To assess reliability, Cronbach's alpha and composite reliability were used, while the Fornell–Larcker criterion was applied to evaluate the validity of the questionnaire. Furthermore, structural equation modeling (SEM) was employed for the analysis of quantitative data.

Table 1. Demographic Characteristics of Interviewees

No.	Age	Education Level	Work Experience	Job Position and Workplace
1	51 years	PhD	More than 20 years	Professor and Faculty Member, University of Tehran
2	60 years	PhD	More than 20 years	Professor and Faculty Member, University of Tehran
3	44 years	PhD	More than 20 years	Assistant Professor, Islamic Azad University, Qazvin Branch
4	47 years	PhD	More than 20 years	Assistant Professor, Islamic Azad University, Qazvin
5	45 years	PhD	More than 20 years	Associate Professor, Ferdowsi University of Mashhad
6	37 years	PhD	11 to 20 years	Associate Professor, Islamic Azad University, Science and Research Branch

Table 2 presents the main components of the study extracted from the interviews. A total of 26 primary components were identified from the interviews, which also formed the basis for designing the questionnaire items.

Table 2. Main Components of the Study Extracted from Interviews

Components	Components	Components
Access of authorized individuals	Events and occurrences	Higher speed and lower cost
Complete presentation of information	مناسب volume of information	Unbiased information
Improved decision-making	Financial misuse	Relevance of information
Faithful representation of information	Comparability of information	Understandability of information
Predictability of information	Feedback value of information	Timeliness of information
Transparency of financial information	Restricting access	Accurate recording of events and activities
Readability and lack of complexity	Strong content	Sufficient breadth and depth
Up-to-date information	Neutral information	Reduction of uncertainty
Timely information	Comprehensive and complete information	

Table 3. Demographic Characteristics of the Statistical Sample

Variable	Category	Frequency	Percentage
Gender	Male	85	45.5%
	Female	102	54.5%
Age	Under 30 years	122	65.2%
	31–40 years	33	17.6%
	Over 40 years	32	17.1%
Education Level	Bachelor's degree	136	72.2%
	Master's degree	26	13.9%
	PhD	25	13.4%
Work Experience	Less than 10 years	138	73.8%
	11–20 years	27	14.4%
	More than 20 years	22	11.8%

The results presented in Table 3 indicate that among the 187 participants in this study, 45.5% (85 individuals) were male and 54.5% (102 individuals) were female. Additionally, among the respondents, 122 individuals (65.2%) were under 30 years of age, 33 individuals (17.6%) were between 31 and 40 years old, and 32 individuals (17.1%) were over 40 years old. In terms of educational level, 136 individuals (72.2%) held a bachelor's degree, 26 individuals (13.9%) held a master's degree, and 25 individuals (13.4%) held a PhD. Regarding work experience, 138 respondents (73.8%) had less than 10 years of experience, 27 respondents (14.4%) had between 11 and 20 years of experience, and 22 respondents (11.8%) had more than 20 years of work experience.

Findings and Results

Table 4 presents the reliability indices, including Cronbach's alpha and composite reliability.

Table 4. Reliability Assessment of the Questionnaire (Cronbach's Alpha and Composite Reliability)

Dimensions	Cronbach's Alpha	Composite Reliability
Role of Information Technology in the Financial Reporting Environment	0.742	0.871
Role of Artificial Intelligence in Preparing Accounting and Financial Information	0.842	0.918
Role of Artificial Intelligence in Financial Information Characteristics	0.863	0.964

Table 4 shows the results of reliability coefficients (Cronbach's alpha) and composite reliability for the questionnaire dimensions. Given that all Cronbach's alpha and composite reliability coefficients exceed 0.70, the reliability and internal consistency of the questionnaire dimensions can be confirmed.

Factor loading assessment is one of the key criteria for construct validity in factor analysis and structural equation modeling, and it helps determine the strength of the relationship between each item (questionnaire item) and its corresponding latent variable. The results of factor loadings are presented in Table 5.

Table 5. Factor Loadings of the Questionnaire (PLS Output)

Components	Items	N	Mean	Factor Loading	Std. Deviation	t-value	Significance
Role of IT in Financial Reporting Environment	Changes in the financial reporting environment due to IT developments affect the relevance of accounting information.	187	2.5722	0.741	0.043	15.312	0.000
	Changes in the financial reporting environment due to IT developments affect the faithful representation of accounting information.	187	2.0160	0.651	0.067	8.548	0.000
	Changes in the financial reporting environment due to IT developments affect the comparability of accounting information.	187	1.9465	0.712	0.060	10.815	0.000
	Changes in the financial reporting environment due to IT developments affect the predictability of accounting information.	187	2.1176	0.698	0.048	14.128	0.000
	Changes in the financial reporting environment due to IT developments affect the feedback value of accounting information.	187	1.9733	0.630	0.044	14.963	0.000
	Changes in the financial reporting environment due to IT developments affect the timeliness of accounting information.	187	2.0000	0.741	0.053	12.841	0.000
Role of AI in Preparing Accounting and Financial Information	The use of AI restricts access to authorized individuals.	187	2.0909	0.613	0.064	10.245	0.000
	The use of AI in preparing accounting and financial reports presents events and activities more accurately.	187	1.8930	0.689	0.040	17.129	0.000
	AI applications provide accounting information in a user-friendly, fast, and low-cost format.	187	2.2674	0.714	0.042	17.119	0.000
	AI does not omit aspects of events or activities and contributes to complete information presentation.	187	2.2353	0.641	0.045	13.673	0.000
	The use of modern technologies such as AI provides clear, appropriately sized, yet comprehensive information.	187	2.2032	0.690	0.061	8.631	0.000
	The use of AI provides unbiased accounting and financial information.	187	2.0214	0.919	0.019	63.365	0.000
	The use of AI in preparing financial information improves decision-making.	187	2.1818	0.841	0.012	82.118	0.000
	Technology may lead to increased financial misuse; therefore, accountants must possess greater technical knowledge.	187	2.1444	0.916	0.021	36.582	0.000
Role of AI in Financial Information Characteristics	The use of IT affects the understandability of financial information.	187	2.1337	0.819	0.042	17.746	0.000
	The use of IT affects the transparency of financial information.	187	2.0749	0.748	0.034	19.213	0.000
	AI is capable of restricting access to authorized individuals.	187	2.5615	0.655	0.059	14.641	0.000
	AI accurately reflects events and activities in financial reports.	187	2.2193	0.790	0.041	20.618	0.000
	AI provides readable and non-complex information to users.	187	2.0481	0.764	0.028	13.891	0.000
	AI-based reports are considered reliable due to strong content and sources.	187	2.2620	0.818	0.041	18.361	0.000

AI-based reports do not omit aspects of events and provide sufficient breadth and depth.	187	2.2032	0.752	0.047	21.200	0.000
AI includes event and activity data up to the current date and time.	187	2.1230	0.885	0.036	32.962	0.000
AI provides impartial, unbiased, and neutral information.	187	2.0428	0.856	0.010	46.412	0.000
AI reduces uncertainty and improves decision-making.	187	2.1283	0.863	0.021	54.635	0.000
AI provides timely information for decision-makers.	187	1.9947	0.721	0.015	32.120	0.000
AI provides complete and comprehensive information for decision-makers.	187	2.0481	0.926	0.017	78.971	0.000

Table 6. Correlation Matrix and Discriminant Validity Based on the Fornell–Larcker Criterion

Dimension	Role of IT in Financial Reporting Environment	Role of AI in Preparing Accounting and Financial Information	Role of AI in Financial Information Characteristics
Role of IT in Financial Reporting Environment	–	0.810	0.891
Role of AI in Preparing Accounting and Financial Information	0.895	–	0.780
Role of AI in Financial Information Characteristics	0.847	0.718	–

According to the Fornell–Larcker criterion, a latent variable should exhibit greater variance with its own indicators compared to other latent variables in order to demonstrate adequate discriminant validity. As shown in Table 6, the components related to the role of artificial intelligence in accounting information and the role of information technology in the financial reporting environment have the highest correlations with their own respective constructs, confirming their discriminant validity. Acceptable discriminant validity in a measurement model indicates that a construct has stronger interactions with its own indicators than with other constructs in the model.

One of the most widely recognized indices for assessing the predictive capability of structural models is the Stone–Geisser (Q^2) index. Values of this index greater than zero indicate that the model has an adequate ability to reconstruct observed data and possesses acceptable predictive relevance. In general, values of 0.02, 0.15, and 0.32 indicate weak, moderate, and strong predictive power of exogenous variables in the model, respectively. Accordingly, if all obtained values are positive and fall within the strong range, it can be concluded that the structural model of the study has high quality and strong predictive capability. In the present study, based on the results presented in Table 7, the structural model demonstrates strong predictive power.

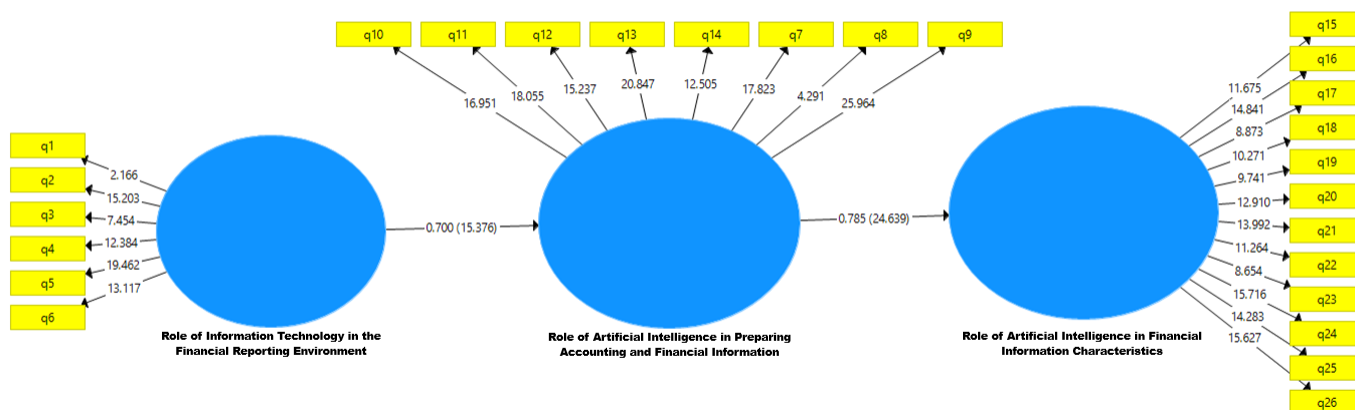
Table 7. Stone–Geisser (Q^2) Index for the Questionnaire (PLS Output)

Dimensions	SSO	SSE	$Q^2 (=1-SSE/SSO)$
Role of Information Technology in the Financial Reporting Environment	4246	1145.314	0.441
Role of Artificial Intelligence in Preparing Accounting and Financial Information	1544	800.561	0.690
Role of Artificial Intelligence in Financial Information Characteristics	5018	2108.415	0.489

The significance of path coefficients is one of the key indicators for confirming relationships and hypotheses in the structural model. Based on the results, the obtained t-values, which are greater than 1.96, indicate that the relationships between variables are statistically significant. These results are presented in Table 8.

Table 8. Examination of Relationships within the Structural Model

Structural Relationships	Mean	Standard Deviation	t-value	Significance Level
Role of Information Technology in the Financial Reporting Environment → Role of Artificial Intelligence in Preparing Accounting and Financial Information	0.705	0.045	15.573	0.000
Role of Artificial Intelligence in Preparing Accounting and Financial Information → Role of Artificial Intelligence in Financial Information Characteristics	0.792	0.034	23.213	0.000


Figure 1. Final Model with t and Beta Values

According to Table 8 and Figure 1, relationships with significance levels below 0.05 and t-values greater than 1.96 are considered statistically significant.

As observed, the highest t-value in the component “Role of Information Technology in the Financial Reporting Environment” corresponds to Item 5, while the lowest corresponds to Item 1. The results indicate that information technology has a positive and significant impact on all dimensions of the financial reporting environment, including relevance, faithful representation, comparability, predictability, feedback value, and timeliness.

In the component “Role of Artificial Intelligence in Preparing Accounting and Financial Information,” the highest t-value corresponds to Item 9, while the lowest corresponds to Item 8. Furthermore, the findings indicate that the use of artificial intelligence in the preparation of financial information leads to increased security, accuracy, processing speed, cost reduction, completeness, clarity, comprehensiveness, and neutrality of information.

Additionally, in the component “Role of Artificial Intelligence in Financial Information Characteristics,” the highest t-value corresponds to Item 26, while the lowest corresponds to Item 17. Moreover, artificial intelligence plays a significant role in enhancing qualitative characteristics of accounting information, such as understandability and transparency.

The significance levels among the components, which are below 5% (equal to 0.000), also indicate the existence of relationships among the study components. This implies that the role of information technology in the financial reporting environment, the role of artificial intelligence in preparing accounting and financial information, and the role of artificial intelligence in financial information characteristics are interdependent.

Discussion and Conclusion

The findings of the present study provide strong empirical evidence regarding the significant and positive role of information technology and artificial intelligence in enhancing the qualitative characteristics of accounting information. The results demonstrated that information technology exerts a statistically significant effect on all

dimensions of the financial reporting environment, including relevance, faithful representation, comparability, predictability, feedback value, and timeliness. These findings indicate that the transformation of the financial reporting environment through technological advancements contributes to improving the usefulness and decision relevance of accounting information. This outcome is consistent with prior research emphasizing that digital transformation and the integration of advanced information systems lead to more efficient data processing, enhanced transparency, and improved reporting quality (1, 2). The observed impact of information technology on the qualitative attributes of accounting information also aligns with the argument that technological infrastructures facilitate real-time reporting and reduce information asymmetry among stakeholders, thereby strengthening the decision-making process (3, 4).

Furthermore, the results revealed that artificial intelligence plays a crucial role in the preparation of accounting and financial information. Specifically, the use of AI was found to significantly improve security, accuracy, processing speed, cost efficiency, completeness, clarity, comprehensiveness, and neutrality of financial information. These findings suggest that AI technologies not only automate routine accounting tasks but also enhance the quality and integrity of financial data. This is in line with previous studies that have highlighted the ability of AI systems to process large volumes of data with high precision and to reduce human error in financial reporting processes (5, 6). Additionally, the role of AI in strengthening internal control systems and ensuring reliable financial reporting has been emphasized in the literature, indicating that organizations adopting AI-driven accounting systems can achieve higher levels of financial transparency and accountability (9, 10).

The findings also demonstrated that artificial intelligence significantly enhances the qualitative characteristics of financial information, particularly in terms of understandability, transparency, neutrality, and timeliness. This implies that AI not only improves the technical aspects of data processing but also contributes to making financial information more accessible and meaningful for users. These results corroborate earlier research suggesting that AI-based accounting information systems enable the presentation of information in a more user-friendly and interpretable format, thereby increasing its usefulness for decision-makers (22, 23). Moreover, the ability of AI to reduce uncertainty and provide predictive insights supports its role in enhancing the forward-looking relevance of accounting information, which is critical in dynamic and uncertain business environments (5).

Another important finding of the study is the significant interrelationship among the main constructs, namely the role of information technology in the financial reporting environment, the role of artificial intelligence in preparing accounting information, and the role of artificial intelligence in financial information characteristics. The structural model results indicated that information technology positively influences the adoption and effectiveness of artificial intelligence in accounting processes, which in turn enhances the qualitative characteristics of financial information. This interdependency highlights the synergistic relationship between information technology and artificial intelligence, suggesting that the benefits of AI cannot be fully realized without a robust technological infrastructure. This finding is supported by prior studies that emphasize the importance of integrating different technological components to achieve optimal performance in accounting information systems (11, 15).

In addition, the strong predictive power of the structural model, as indicated by the Stone–Geisser (Q^2) values, confirms the robustness and reliability of the proposed relationships. The high predictive relevance of the model suggests that the identified variables effectively explain variations in the qualitative characteristics of accounting information. This result reinforces the theoretical framework of the study and supports the notion that the integration of information technology and artificial intelligence is a key determinant of financial reporting quality. Similar

conclusions have been drawn in empirical studies demonstrating that advanced technological capabilities significantly enhance the predictive accuracy and reliability of accounting information systems (14).

The findings related to the role of artificial intelligence in improving decision-making are also noteworthy. The results indicate that AI contributes to better decision outcomes by providing accurate, timely, and comprehensive information, thereby reducing uncertainty and enhancing managerial effectiveness. This is consistent with research highlighting the importance of data-driven decision-making in modern organizations and the role of AI in facilitating such processes (8, 19). Furthermore, the impact of AI on investor behavior and performance, mediated by the quality of accounting information, underscores the broader economic implications of technological advancements in accounting (16).

The study also highlights the importance of user trust and acceptance in the successful implementation of artificial intelligence in accounting systems. While AI offers significant benefits, its effectiveness depends on users' confidence in the reliability and integrity of the generated information. This finding aligns with the Technology Acceptance Model, which emphasizes the role of perceived usefulness, ease of use, and trust in technology adoption (12, 13). Building trust in AI systems requires organizations to ensure transparency, maintain data security, and provide adequate training for users, thereby facilitating the effective utilization of technological innovations.

Moreover, the results emphasize the evolving role of accounting professionals in the digital era. As AI automates routine tasks, accountants are increasingly required to focus on analytical and strategic functions, necessitating the development of new skills and competencies. This shift is consistent with global trends in accounting education and professional practice, which highlight the need for continuous learning and adaptation to technological changes (7, 20, 21). The findings suggest that organizations and educational institutions must invest in training programs to equip accounting professionals with the necessary skills to effectively leverage AI technologies.

Furthermore, the study contributes to the growing body of literature on the role of artificial intelligence in sustainability reporting and digital transformation. The integration of AI into accounting systems not only improves financial reporting quality but also supports the development of sustainable business practices by enhancing transparency and accountability. This is consistent with recent research highlighting the role of AI in improving digital sustainability reporting and strengthening internal control systems (17).

Overall, the findings of this study provide comprehensive evidence of the transformative impact of information technology and artificial intelligence on accounting practices and financial reporting. The results underscore the importance of adopting a holistic approach to technological integration, considering both technical and organizational factors. By leveraging the synergistic relationship between information technology and artificial intelligence, organizations can enhance the quality of accounting information, improve decision-making, and achieve sustainable competitive advantage.

One of the main limitations of this study relates to the use of convenience sampling in the quantitative phase, which may limit the generalizability of the findings to broader populations. Additionally, the reliance on self-reported data collected through questionnaires may introduce response bias, as participants' perceptions may not fully reflect actual practices. Another limitation concerns the cross-sectional nature of the study, which does not allow for the examination of causal relationships over time. Furthermore, the study focuses primarily on the perceptions of experts and professionals in the accounting field, which may not capture the perspectives of other stakeholders such as investors or regulators.

Future research could address these limitations by employing longitudinal designs to examine the dynamic effects of information technology and artificial intelligence on accounting practices over time. Researchers may also consider using more diverse and representative samples, including participants from different industries and geographical contexts, to enhance the generalizability of the findings. In addition, future studies could explore the moderating and mediating effects of variables such as organizational culture, regulatory frameworks, and technological readiness on the relationship between AI adoption and accounting information quality. The application of advanced analytical techniques, such as machine learning models, could also provide deeper insights into the complex interactions among variables.

From a practical perspective, organizations should prioritize the development and implementation of integrated information technology infrastructures to support the effective adoption of artificial intelligence in accounting systems. Managers are encouraged to invest in training programs to enhance the technological competencies of accounting professionals and to foster a culture of innovation and continuous learning. Furthermore, organizations should establish robust governance and control mechanisms to ensure data security, privacy, and ethical use of AI technologies. Policymakers and regulators are also advised to develop comprehensive frameworks to guide the adoption of AI in accounting, ensuring transparency, accountability, and stakeholder trust.

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Authors' Contributions

All authors equally contributed to this study.

Declaration of Interest

The authors of this article declared no conflict of interest.

Ethical Considerations

All ethical principles were adhered in conducting and writing this article.

Transparency of Data

In accordance with the principles of transparency and open research, we declare that all data and materials used in this study are available upon request.

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