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The impact of artificial intelligence technologies on improving the accuracy of compliance audits in financial institutions

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Abstract

This research aims to analyze the impact of artificial intelligence (AI) technologies on supporting compliance audit processes within financial institutions. The applied aspect of the research involved studying the impact of AI technologies on compliance audit accuracy at Al-Rafidain Bank and Al-Rasheed Bank's Anbar branch. Data was collected using a questionnaire distributed to 75 employees, with 69 valid questionnaires returned. To ensure measurement accuracy and the reliability of the results, the questionnaire's validity was internally verified, and the questions were reviewed by four specialized professors. Internal consistency of the variables was also assessed using Cronbach's alpha coefficient. Subsequently, the data were collected and statistically analyzed using SPSS version 25 to draw conclusions and findings. The research results showed that adopting AI technologies in compliance audit processes enhances financial reliability and transparency through early detection of deviations and monitoring compliance with internal regulations and policies. The research recommends that banks expand their use of AI tools such as machine learning, natural language processing, and robotic process automation to improve compliance audit accuracy and reduce errors and deviations. It is also preferable to provide ongoing training programs for auditors on the effective use of modern technologies, with a focus on the integration of automated analysis and professional expertise to ensure full utilization of artificial intelligence capabilities in enhancing the quality of control and compliance.

Introduction

In recent years, the world has witnessed a radical transformation in accounting and auditing methods as a result of the rapid development of artificial intelligence (AI) technologies, which have become one of the most important supporting tools in the fields of financial analysis and auditing. In financial institutions, which are among the most sensitive and important sectors of the national economy, compliance auditing has become an imperative to ensure transparency and adherence to laws and regulatory policies. However, traditional auditing methods often face difficulties in dealing with the vast amounts of complex and changing data, leading to delays in detecting errors or instances of non-compliance. This is where artificial intelligence comes in, providing advanced capabilities for high-precision data analysis, risk prediction, and proactive detection of financial irregularities.

Therefore, this research seeks to study the impact of applying AI technologies on improving the accuracy of compliance auditing within financial institutions by analyzing the relationship between the use of smart tools and the efficiency of audit and control processes. It also aims to present a scientific and applied framework that contributes to developing an advanced digital auditing environment that supports financial integrity and enhances stakeholder confidence in financial institutions. First, Research Methodology

1) Research Problem

Despite the rapid technological advancements in the financial sector, many financial institutions still face challenges in ensuring the accuracy and reliability of compliance audits due to reliance on traditional methods of data collection and analysis. This deficiency leads to potential delays in detecting financial irregularities and weak adherence to regulatory standards, negatively impacting transparency and public trust in financial institutions. Hence, the research problem stems from the following main question:

To what extent does the use of artificial intelligence (AI) technologies contribute to improving the accuracy of compliance audits within financial institutions?

2) Research Hypothesis

The current research hypothesis is as follows:

There is a statistically significant effect of using AI technologies on improving the accuracy of compliance audits in financial institutions.

3) Research Objectives

This research aims to achieve a set of scientific and applied objectives, most notably:

1. Analyzing the impact of AI technologies on supporting compliance audit processes within financial institutions.

2. Measuring the impact of applying AI technologies on improving the accuracy and efficiency of compliance audit results.

3. Determining the relationship between the use of AI and the level of regulatory compliance of financial institutions with supervisory standards and policies. 4. Highlighting the most prominent challenges and obstacles facing auditors in adopting artificial intelligence (AI) technologies within their daily tasks.

5. Proposing an applied framework through which AI tools can be integrated into the audit system to achieve the highest levels of accuracy and transparency.

4) Significance of the Research

The significance of this research stems from its focus on a contemporary topic with a direct impact on the efficiency and reliability of financial audit systems in financial institutions: the

application of AI technologies in compliance auditing. With the increasing volume of data and the complexity of financial operations, traditional methods have become difficult to detect deviations and errors accurately and in a timely manner. This research contributes to clarifying how AI can improve audit quality through automated big data analysis, the detection of anomalies, and the reduction of human error. It also provides a scientific and applied framework to assist financial institutions and auditors in adopting smart technologies that enhance transparency and support compliance with local and international regulatory standards.

Thus, the findings of this research will benefit decision-makers, auditors, and legislators alike by supporting the shift towards smart, technology-based auditing that improves financial performance and strengthens confidence in financial reports. 5) Previous Studies

1. Al-Omush, A., Almasarwah, A., & Al-Wreikat, A. (2025). Artificial intelligence in financial auditing: redefining accuracy and transparency in assurance services.

Artificial Intelligence in Financial Auditing: Redefining Accuracy and Transparency in Assurance Services.

This research aims to analyze the impact of using artificial intelligence (AI) technologies on enhancing the accuracy and efficiency of compliance auditing within financial institutions. It examines the extent to which these technologies contribute to reducing errors and improving the quality of supervisory decisions. The research employs a descriptive-analytical approach using mixed methods (quantitative and qualitative). Financial audit data utilizing AI tools was analyzed, and semi-structured interviews were conducted with experts and financial auditors to assess the impact of these technologies on the auditing environment. The research concluded that the use of AI technologies effectively contributes to improving compliance audit accuracy and reducing the likelihood of human error. Furthermore, it enhances the ability of financial institutions to detect non-compliance cases more quickly and reliably. The research recommends that financial institutions adopt clear strategies to integrate artificial intelligence into internal and external audit systems, while training professional staff to deal with these technologies to ensure maximum benefit from them in raising the quality and reliability of financial reports.

2. Gandhi, S. T. (2023). AI-Driven Compliance Audits: Enhancing Regulatory Adherence in Financial and Legal Sectors.

AI-Driven Compliance Audits: Enhancing Regulatory Adherence in the Financial and Legal Sectors.

This study utilizes Natural Language Processing (NLP) and automation techniques to detect regulatory violations, extract evidence, and deliver audit results more quickly and consistently. The paper proposes a hybrid compliance audit model that combines Transformer-based NLP for interpreting contracts and legislation, supervised anomaly detection techniques for transaction chains and reporting, and an Explainability Layer that links model outputs to regulatory clauses and audit paths. This framework was applied to a dataset comprising anonymized and artificially generated real financial transaction records, regulatory filings, and contracts (approximately 1.2 million records and 12,000 contract clauses). The study methodology involved adjusting legal

transformers and using gradient-enhanced anomaly detectors to monitor transactions, along with a rules-based transformation module to link model signals to audit evidence. The results showed average F1 scores of 0.88, 0.84, and 0.81, respectively, with the ability to adjust the balance between accuracy and reproducibility to suit each organization's regulatory risk level. Linking the outputs to regulatory provisions increased the human auditors' verification rate by 42%, while the false positive rate in transaction detection decreased by 31% compared to traditional methods. The study concludes that a hybrid approach combining artificial intelligence and regulatory rules can significantly improve audit efficiency and compliance, while maintaining the transparent audit pathways essential for governance. Key limitations of the research included the representativeness of the dataset and the need for human intervention in high-stakes decisions to ensure the reliability of the results.

3. Onyenahazi, O. B. 2025. Integrating Artificial Intelligence in Financial Auditing to Enhance Accuracy, Efficiency, and Regulatory Compliance Outcomes.

Integrating Artificial Intelligence in Financial Auditing to Enhance Accuracy, Efficiency, and Regulatory Compliance Outcomes.

This research aims to analyze the impact of integrating artificial intelligence technologies—such as machine learning, natural language processing, and process automation—on improving the accuracy, efficiency, and quality of financial auditing, thereby contributing to enhanced transparency and compliance with regulatory standards within financial institutions. The study adopted an analytical-applied approach, analyzing quantitative and qualitative data derived from real-world applications of artificial intelligence in audit processes at global financial institutions and auditing firms (such as the Big Four). Case studies and field reports were also utilized to assess the impact of artificial intelligence on improving auditor performance and reducing human error. The study concluded that the use of artificial intelligence technologies significantly contributes to raising the level of financial audit accuracy, reducing task completion time, and improving the ability to detect errors and fraud at an early stage. The study also revealed that institutions adopting artificial intelligence (AI) demonstrated improved financial reporting quality and regulatory compliance, with a significant decrease in error rates compared to traditional methods. It recommends adopting a national and institutional strategy for integrating AI into financial auditing practices. This strategy should include training auditors on AI tools and developing regulatory frameworks to ensure transparency and accountability in AI use, with a focus on data governance and explainable AI to guarantee the confidence of regulators and users of financial reports.

Second: Theoretical Framework

1) The Concept of Artificial Intelligence

Artificial intelligence (AI) is one of the most prominent technological innovations that has radically transformed various aspects of economic and administrative life, including the financial and accounting sectors. AI is defined as the ability of systems and machines to mimic human behavior in thinking, learning, problem-solving, and decision-making by processing and analyzing data in advanced ways that resemble human thought processes. (Al-Omush et al.,

2025:2) The concept of AI originated in the mid-20th century when researchers sought to design systems capable of logical reasoning and autonomous decision-making. With the development of computing, big data, and the emergence of machine learning algorithms, artificial intelligence (AI) capabilities have evolved to include analyzing massive amounts of data, recognizing patterns, and predicting future outcomes with a high degree of accuracy. (Onyenahazi, 2025:24)

In the financial and accounting context, AI has become a strategic tool used by organizations to improve operational efficiency and reduce human error. Thanks to its advanced analytical capabilities, intelligent systems can detect suspicious financial transactions, identify fraud early, and analyze financial data in real time, thus contributing to increased transparency and accountability. It is also used in financial auditing, risk management, and financial reporting through technologies such as natural language processing (NLP) and robotic process automation (RPA), which enable the highly accurate analysis of legal texts and financial reports. (Bako&Tanko, 2022:16) The researcher believes that AI represents a new stage of technological development aimed at supporting, not replacing, humans by enhancing decision quality and reducing the effort and time required to complete financial and administrative processes. Therefore, its use in the financial auditing and regulatory compliance environment contributes to improving the accuracy and reliability of information.

The researcher believes that artificial intelligence (AI) technologies contribute to a qualitative shift within the financial auditing environment, providing auditors with tools capable of analyzing complex data with high accuracy and detecting deviations before they occur. Furthermore, the integration of machine learning, natural language processing, and process automation enables the development of an intelligent oversight system characterized by speed and transparency. As a result, financial institutions achieve a balance between operational efficiency and regulatory compliance, while simultaneously reducing costs and improving the quality of audit decisions.

3) The Role of Artificial Intelligence in the Digital Transformation of Financial Institutions

Artificial intelligence (AI) plays a pivotal role in accelerating the digital transformation of financial institutions. It represents a strategic tool for improving operational efficiency, enhancing data accuracy, and delivering innovative financial services. Its role can be illustrated in several key areas:

 Improving Operational Efficiency: AI utilizes robotic process automation (RPA) to transform traditional manual procedures in banking operations, such as payment processing or data verification, into precise and rapid automated processes, thereby reducing operational time and costs.

• Data Analysis and Intelligent Decision-Making: Through machine learning and predictive analytics, artificial intelligence (AI) can process massive amounts of financial data in real time, extract patterns, and predict financial risks or unusual behaviors, helping management make informed, data-driven decisions. (Mohsen ET AL., 2025:681)

• Enhanced Customer Experience: AI uses technologies such as natural language processing and intelligent chatbots to provide personalized banking services, 24/7 customer support, and automated financial advice, improving service quality and increasing customer satisfaction.

• Improved Oversight and Compliance: AI can continuously monitor financial transactions, detect irregularities or deviations in real time, thereby enhancing internal controls, regulatory compliance, and reducing financial fraud.

• Supporting Financial Innovation: AI enables the development of new financial products and services, such as smart loans, customized risk analysis, and data-driven investment solutions, enhancing the financial institution's competitiveness in the digital market. Artificial intelligence (AI) is a cornerstone of the digital transformation of financial institutions, integrating automation, analytical intelligence, and advanced customer services to enhance efficiency, accuracy, and innovation in the modern financial environment. (Rodrigues ET AL., 2022:2)

4) Benefits and Challenges of Applying AI in the Financial Audit Environment

AI is a pivotal tool for improving the quality and effectiveness of financial audits within financial institutions. It can process massive amounts of data quickly and accurately, reducing human error and enhancing the reliability of results. AI also enables the early detection of financial risks and fraud by recognizing unusual patterns and predictively analyzing data, supporting accurate and informed decision-making. Furthermore, AI helps improve compliance with financial and regulatory standards, allowing for continuous monitoring of adherence to laws and policies, thus reducing legal and financial risks for institutions. (Mohammed et al., 2025: 163) However, the application of artificial intelligence in financial auditing faces several challenges, including the need for large and accurate datasets, the protection of privacy and confidentiality, and the difficulty of interpreting some complex model results. This necessitates specialized human skills to understand the outputs and make appropriate decisions. The high cost of implementing and maintaining AI systems also presents an additional challenge, along with the risks arising from over-reliance on technology without sufficient human oversight. Therefore, integrating AI into financial auditing becomes a balancing act between leveraging modern technology and enhancing human analytical and evaluative capabilities to ensure the accuracy and efficiency of financial operations. (Riana et al., 2024: 39).

5) The Concept of Auditing and its Importance in Enhancing Confidence in Financial Systems.

Auditing is the process of examining and analyzing the financial and administrative data of institutions to verify their accuracy and reliability, and to ensure compliance with internal policies, accounting standards, and applicable laws. Auditing plays a pivotal role in enhancing transparency and accountability within financial institutions, as it can detect errors, deviations, and financial manipulation, and provides a clear and reliable picture of the financial position. Auditing also contributes to strengthening stakeholder confidence, including investors, regulators, and the public, by assuring them that financial resources are managed efficiently and with integrity, thus supporting financial stability and strengthening the institution's long-term reputation. (Ganapathy, 2023:329)

6) The Difference Between Financial and Compliance Auditing in Terms of Objectives and Procedures.

Financial Auditing:

Financial auditing is a crucial tool for ensuring the accuracy of an institution's financial information. Its primary objective is to ensure that financial statements and related reports present a true and clear picture of the institution's financial position. This is done by reviewing accounting records, bank accounts, financial records, and supporting documents for transactions. (Tayeb et al., 2024: 22)

Financial auditing aims to ensure the accuracy and validity of financial statements through a comprehensive review designed to present a fair and objective picture of an organization's financial performance to investors and stakeholders. It also seeks to uncover errors or misrepresentations that could affect the credibility of financial reports. These objectives are achieved through a series of meticulous procedures, including examining accounting entries and documents, reconciling financial statements with records and actual assets, and conducting in-depth data analysis to detect any potential discrepancies or deviations. Through this methodology, financial auditing contributes to establishing the principles of reliability and transparency, and enhances the confidence of users of financial information, both internally and externally. (Onyenahazi, 2025: 24)

2**. Compliance Audit:**

Compliance auditing focuses on verifying an organization's adherence to applicable laws, regulations, and internal policies, whether at the financial or administrative level. Its objective is to ensure that financial and administrative operations comply with legal and regulatory requirements, rather than necessarily focusing on financial results or profitability.

Compliance auditing aims to ensure that an organization adheres to all laws, regulations, and regulatory standards. The audit governs the organization's activities, ensuring the reduction of legal and administrative risks that may arise from compliance violations. It also seeks to establish transparency and enhance accountability within the work environment. To achieve this, the auditor reviews contracts and agreements to verify their compliance with legal and regulatory requirements, ensures that financial and administrative operations are carried out in accordance with approved internal policies, and examines internal control records and regulatory reports to guarantee full compliance. Through these procedures, compliance auditing contributes to protecting the organization from potential penalties and supports its reputation and the confidence of stakeholders.

3**. Key Differences Between Financial and Compliance Auditing:**

Financial and compliance auditing can be distinguished through several key aspects. The primary objective of financial auditing is to ensure the accuracy and reliability of financial information, while compliance auditing focuses on ensuring compliance with applicable laws, policies, and procedures within the organization. The scope of focus is as follows: financial auditing includes financial statements and accounting entries, while compliance auditing covers laws, regulations,

internal policies, and regulatory reports. Regarding tools and procedures, financial auditing relies on examining accounts, conducting financial analysis, and reviewing entries in detail, while compliance auditing utilizes... Examining legal documents, reviewing compliance with internal policies, and verifying operational procedures to ensure full adherence.

The researcher believes that financial auditing and compliance auditing can be viewed as complementary mechanisms, but with different objectives and areas of focus. The former focuses on ensuring the accuracy and validity of financial data and providing a clear and realistic picture of the organization's financial performance, while the latter focuses on ensuring compliance with laws, regulations, and internal policies to mitigate legal and administrative risks. The procedures used also differ. Financial auditing relies on reviewing accounts, records, and financial documents, while compliance auditing focuses on examining contracts, reviewing internal policies, and verifying operational compliance. Consequently, financial auditing enhances financial reliability and transparency, while compliance auditing ensures legal and regulatory accountability, thus providing comprehensive protection for the organization.

7) The Relationship Between Artificial Intelligence Technologies and the Accuracy of Compliance Auditing

Artificial intelligence technologies play a pivotal role in enhancing the accuracy and efficiency of compliance audit processes. They enable the analysis of massive amounts of data with speed and accuracy exceeding human capabilities, contributing to the detection of potential deviations and violations before they escalate. These technologies also help organizations strictly adhere to regulations and laws by monitoring Continuous monitoring of financial and administrative processes, and identification of patterns that deviate from internal policies or regulatory requirements. Its positive impact is further enhanced by the integration of artificial intelligence (AI) and human auditors. AI provides advanced analytical tools, while human auditors contribute professional expertise and objective judgment, creating a more accurate and reliable compliance audit system. (Stumke&Swanepoel, 2025:2) AI also contributes to increased compliance audit effectiveness by predicting future risks and identifying areas requiring urgent attention, thus reducing reliance on manual auditing.

Third: The Applied Aspect

The applied aspect of this research aims to study the impact of artificial intelligence techniques on improving the accuracy of compliance audits within financial institutions, focusing on Al-Rafidain Bank and Al-Rasheed Bank's Anbar branch as case studies. A questionnaire was adopted as the primary data collection tool, with 75 questionnaires distributed to employees in both banks. 69 valid questionnaires were returned, while the remainder were discarded due to insufficient data. To ensure the reliability of the results and the accuracy of variable measurement, emphasis was placed on the questionnaire's internal validity and the validity of the research questions. The research questions related to the four variables were reviewed by four professors specializing in accounting to confirm their suitability and accuracy in measuring the phenomena under study. The internal consistency of the research variables was also assessed using Cronbach's alpha coefficient, which confirms the high reliability of the questionnaire and its ability to accurately measure the various dimensions of the research.

The data were analyzed using SPSS version 25, which enabled the necessary statistical analyses to test the hypotheses and explore the relationship between artificial intelligence techniques and the accuracy of compliance auditing, thus enhancing the practical results and giving them a reliable scientific character.

Table 1: Cronbach's Alpha Coefficient for Research Variables

Cronbach's alpha coefficient	Number of phrases	Variables
.871	10	Artificial Intelligence Techniques
.893	10	Compliance Audit Accuracy

SPSS V25 outputs

A. Demographic data

.1Gender

Table 2: Sample members by gender

%ratio	repetition	Category
76.8	53	Male
23.2	16	Female
100.0	69	Total

SPSS V25 Output

These results indicate that males constitute the majority of employees at Al-Rafidain Bank and Al-Rasheed Bank's Anbar branch. This reflects the structural nature of financial institutions in the Iraqi environment, where banking jobs are predominantly male, particularly in the areas of auditing and financial control. It may also reflect a job distribution related to the experience or academic specialization required for these positions.

This distribution is important in interpreting the results of subsequent statistical analysis, as gender can have a limited influence on individuals' attitudes toward adopting artificial intelligence technologies or their evaluation of their accuracy in improving compliance auditing. This aspect should be considered when analyzing the interpretive results of the research.

2- Age

Table 3: Sample individuals by age

%ratio	repetition	Age Group
8.7	6	22-30 years
21.7	15	30-40 years
44.9	31	40-50 years
24.6	17	50 years and older
100.0	69	Total

SPSS V25 Outputs

Table (3) shows the distribution of the sample according to age group. The largest group was (over 40-50 years old) at (44.9%), followed by (50 years and older) at (24.6%), then (over 30-40 years old) at (21.7%). The youngest group (22-30 years old) comprised (8.7%), bringing the total number of participants to (69) employees, according to the SPSS V25 outputs.

These results reflect a positive composition in terms of the experience and competence of the majority of respondents. The high percentage of older age groups indicates the presence of personnel with practical experience and in-depth professional knowledge in the fields of auditing and compliance. This is a supporting factor for the quality of the data obtained from the survey, as participants are better able to accurately and objectively assess the impact of artificial intelligence technologies.

The presence of a proportion of younger age groups is also an encouraging indicator of talent renewal within banks, creating a balanced mix of traditional experience and modern technical knowledge. This enhances the chances of successfully adopting artificial intelligence technologies to improve the accuracy of compliance audits in the future.

3- Educational Level

Table 4 Sample members by educational level

%ratio	repetition	Category
6.79	55	Bachelor's
14.5	10	Higher Diploma
4.3	3	Master's

1.4	1	PhD
100.0	69	Total

SPSS V25 Outputs

Table (4) shows the distribution of the sample members according to educational level. It is evident that the largest percentage of respondents hold a bachelor's degree (79.6%), totaling (55) employees. This is followed by those with a higher diploma (14.5%), totaling (10) employees, and then those with a master's degree (4.3%), totaling (3) employees. The lowest percentage of respondents held a doctorate (1.4%), totaling only (1) employee. The total sample size is (69) questionnaires valid for analysis according to the SPSS V25 outputs. These results are positive and reflect a good level of education among the sample members. The high percentage of bachelor's degree holders indicates a suitable knowledge base that qualifies them to deal effectively with financial and compliance auditing topics. Furthermore, the presence of a number of postgraduate degree holders (master's and doctorate) adds a deeper scientific and analytical dimension to the evaluation of the impact of artificial intelligence technologies.

On the other hand, this diversity in academic levels enhances the reliability of research findings, as it combines the practical perspective of executive staff with the analytical perspective of academic staff, enriching data analysis and providing a broader understanding of the impact of artificial intelligence technologies on improving compliance audit accuracy within financial institutions.

4. Years of Experience

Table 5: Sample individuals by number of years of service

%ratio	repetition	Age Group
10.1	7	Under 5 years
29.0	20	5-10 years
37.7	26	10-15 years
23.2	16	Over 15 years
100.0	69	Total

SPSS V25 Outputs

Table (5) shows the distribution of the sample members according to years of service, where it was found that the largest group of respondents had experience ranging between (10-15 years) at a rate of (37.7%) and a number of (26) employees, followed by the group with experience between (5-10 years) at a rate of (29.0%) and a number of (20) employees, then the group with more than (15 years) at a rate of (23.2%) and a number of (16) employees, while the percentage of those with experience less than (5 years) was (10.1%) and a number of (7) employees, bringing the total to (69) questionnaires valid for analysis according to the outputs of the SPSS V25 program. These results reflect a positive distribution showing that most of the participants have

medium to long professional experience in banking, which gives their responses a high degree of credibility and realism when evaluating the impact of artificial intelligence techniques in compliance auditing. The presence of a percentage of new employees also adds diversity of perspectives and represents a generation more adept at using modern technologies, creating a balance between practical experience and the ability to adopt digital solutions.

Therefore, this diversity of professional experience contributes to enriching the research findings by providing integrated perspectives that combine deep practical experience with an openness to technological development within the banking environment.

5- Academic Qualifications

Table 6: Sample members according to academic achievement

%ratio	repetition	Category
59.4	41	Accounting
11.6	8	Management
14.5	10	Economics
10.1	7	Finance
4.3	3	Other
100.0	69	Total

SPSS V25 Outputs

Table (6) shows the distribution of the sample members according to their academic qualifications. It reveals that the majority of participants (59.4%) (41 employees) had a degree in accounting, followed by economics (14.5%) (10 employees), management (11.6%) (8 employees), and finance (10.1%) (7 employees). An additional 4.3% (3 employees) had various other specializations. The total number of valid questionnaires for analysis using SPSS V25 outputs is 69.

This distribution demonstrates that the majority of employees possess a strong accounting background, which enhances the accuracy and reliability of their responses when assessing the impact of artificial intelligence (AI) technologies on improving compliance audit accuracy. The diversity in other specializations also reflects the presence of highly experienced staff, providing a knowledge base that enriches the analysis and offers a comprehensive perspective on how AI impacts audit processes within banks.

B- Analysis of Sample Responses

1) Artificial Intelligence Technologies – Independent Variable

The following table (7) shows the arithmetic means, standard deviations, ranking, and importance level for the questions (statements) of the independent variable (artificial intelligence technologies), as follows:

Table 7 Arithmetic means and standard deviations for questions (statements) of the independent variable (artificial intelligence techniques)

Importance level	ranking	standard deviation	arithmetic mean	Key Points
Good	9	.822	3.83	Artificial intelligence (AI) technologies help process large amounts of financial data .quickly and efficiently
Good	2	.887	4.09	Machine learning contributes to the early detection of financial irregularities and .discrepancies
high	1	.784	4.28	Natural language processing enables the extraction of substantive information from .financial documents and regulatory reports
Good	3	.857	4.00	Robotic process automation reduces human .error in audit procedures
Good	4	.747	3.97	Predictive analytics contributes to the accurate .and effective identification of future risks
Good	10	.82170	3.8261	The use of AI facilitates monitoring compliance with an organization's internal .regulations and policies
Good	8	1.03827	3.8391	AI tools provide auditors with access to accurate indicators to support decision- .making
Good	5	.91264	3.9275	AI can be relied upon to analyze routine data without the need for constant human .intervention
Good	7	.90537	3.8826	AI technologies help improve audit time .efficiency and reduce repetitive procedures
Good	6	.78101	3.9130	AI technologies enhance the integration of automated analysis and human expertise in .auditing
Good		.6180	3.956	Total

SPSS V25 Output

Table (7) presents the analysis of the independent variable "Artificial Intelligence Technologies" by displaying the arithmetic means, standard deviations, ranking, and importance level for each

questionnaire item. The results show that most items received good arithmetic means, ranging from 3.826 to 4.28, indicating a positive evaluation by employees of Al-Rafidain and Al-Rasheed banks regarding the role of artificial intelligence technologies in enhancing the effectiveness and accuracy of compliance auditing. The highest arithmetic mean (4.28) was for the item related to natural language processing and extracting substantive information from financial documents and regulatory reports, highlighting its significant importance in supporting audit processes accurately and effectively.

The lowest arithmetic mean (3.8261) was for the item related to monitoring compliance with internal regulations and policies using artificial intelligence. However, it remained within the "good" level, indicating employee acceptance of the importance of this technology, despite its relatively lower impact compared to the other items. The varying standard deviations between 0.747 and 1.038 indicate a slight difference in individual evaluations, which is normal given the diversity of experiences and opinions. Meanwhile, the overall sum of the arithmetic means (3.956) shows a generally high level, reflecting employees' appreciation of the role of artificial intelligence in improving the quality and efficiency of compliance audits.

The table provides clear evidence that AI technologies are positively perceived by employees, and the data indicates their importance in supporting the accuracy and effectiveness of compliance audits. Their impact can be further enhanced through staff training on the optimal use of these technologies.

2) Compliance Audit Accuracy – Dependent Variable

Table (8) below shows the arithmetic means, standard deviations, rankings, and importance levels for the questions (statements) related to the dependent variable (compliance audit accuracy), as follows:

Table 8: Arithmetic means and standard deviations for the questions (statements) of the dependent variable (according to compliance audit accuracy)

Importance level	ranking	standard deviation	arithmetic mean	Key Points
Good	9	.74526	3.9420	Compliance audits provide accurate results that reflect an organization's adherence to laws .and internal policies
high	2	.838	4.22	Reviewing contracts and agreements helps .detect potential violations before they occur
Good	7	.772	4.14	Accurate matching of financial data with records and assets helps minimize .discrepancies
Good	8	.963	4.12	Compliance audits reflect the level of transparency and accountability within an .organization
Good	4	.928	4.19	Reviewing operational procedures ensures full .compliance with internal policies

Good	6	.851006	4.15942	Continuous monitoring of financial and administrative processes contributes to .improved audit accuracy
high	3	.802012	4.21739	Detailed analysis of financial records helps .detect errors and misstatements effectively
Good	10	.883446	3.88406	Compliance audits enhance an organization's .ability to make timely corrective decisions
Good	5	.927922	4.18841	Audit reports provide reliable information to support the evaluation of organizational .performance
high	1	.757177	4.31884	Compliance audits ensure alignment between financial operations and laws and regulatory standards, thereby reducing legal and .administrative risks
Good		.5714	4.137	Total

SPSS V25 Output

Table (8) presents the analysis of the dependent variable, "Compliance Audit Accuracy," by displaying the arithmetic means, standard deviations, ranking, and importance level for each questionnaire item. The results indicate that all items received high arithmetic means ranging from 3.884 to 4.318, reflecting a positive assessment by employees of Al-Rafidain and Al-Rasheed banks regarding the accuracy and effectiveness of compliance auditing within financial institutions. The highest arithmetic mean (4.31884) was for the item related to the compliance of financial operations with laws and regulatory standards to reduce legal and administrative risks, highlighting its crucial importance in promoting compliance and minimizing legal and administrative deviations.

The lowest mean (3.88406) was for the item related to supporting rapid corrective decision-making through compliance auditing, but it remained within the "good" level, indicating employee acceptance of the importance of this function within audit processes.

The varying standard deviations between 0.571 and 0.963 indicate some slight differences in individual evaluations, which is normal given the variations in experience and job roles. However, the overall sum of the arithmetic means (4.137) reflects a generally high level, indicating employees' appreciation for the accuracy of compliance audits and their importance in ensuring compliance and risk control.

In summary, the results in the table reflect employees' awareness of the importance of compliance audit accuracy in promoting transparency and accountability, and ensuring adherence to laws and policies. They also support the conclusions regarding the positive impact of artificial intelligence (AI) technologies on improving this aspect of banking operations.

T- Testing the Research Hypothesis

The hypothesis is that the use of AI technologies has a statistically significant effect on improving compliance audit accuracy in financial institutions. Table (9) illustrates the impact of AI technologies on improving compliance audit accuracy in financial institutions, specifically Al-Rafidain Bank and Al-Rasheed Bank, Anbar Branch, as follows:

Table 9: Testing the impact of artificial intelligence techniques on improving compliance audit accuracy in financial institutions.

Model Summary									
					Change Statistics				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	R Square Change	F Change	df1	df2	Sig. F Change
1	.610[a]	.372	.362	.427	.372	39.7	1	67	.000
a. Predictors: (Constant), Independent variable – Artificial intelligence techniques									

SPSS V25 Output

Table (9) presents the results of the hypothesis test regarding the statistically significant effect of using artificial intelligence (AI) technologies on improving compliance audit accuracy in financial institutions. This was achieved through simple regression analysis between the independent variable (AI technologies) and the dependent variable (compliance audit accuracy) at Al-Rafidain Bank and Al-Rasheed Bank, Anbar Branch.

The results indicate a correlation coefficient (R) of 0.610, demonstrating a strong positive relationship between the use of AI technologies and improved compliance audit accuracy. Furthermore, $R^2 = 0.372$ shows that AI technologies explain approximately 37.2% of the variation in compliance audit accuracy, a significant percentage indicating the clear impact of these technologies on the quality of audit processes. Therefore, the research hypothesis is accepted.

The adjusted $R^2 = 0.362$ reflects the robustness of the results and their suitability for use at the sample level, while the F-change = 39.7 with Sig. The F Change = 0.000 indicates that the effect is statistically significant at the 99% confidence level, thus supporting the hypothesis that artificial intelligence (AI) technologies have a significant and positive impact on compliance audit accuracy.

These results reflect that the adoption of AI technologies by financial institutions contributes substantially to raising the level of compliance audit accuracy and enhances adherence to internal laws and policies. This, in turn, supports more effective financial and administrative decision-making and reduces operational and legal risks.

Fourth: Conclusions and Recommendations

A. Conclusions

1. The results of the statistical analysis showed that AI technologies (such as machine learning, natural language processing, robotic process automation, and predictive analytics) have a statistically significant and positive impact on improving compliance audit accuracy at Al-Rafidain Bank and Al-Rasheed Bank's Anbar branch. These technologies explain approximately 37.2% of the changes in compliance audit accuracy, reflecting their importance in supporting control processes and reducing errors and deviations.

F 2. The integration of artificial intelligence (AI) and human auditors contributes to enhancing the quality of compliance audits. AI provides advanced analytical tools, while professional expertise enables more accurate corrective decisions, thus increasing the efficiency and reliability of audit results within financial institutions.

3. Adopting AI technologies in compliance audits enhances financial reliability and transparency through early detection of deviations and monitoring compliance with internal regulations and policies.

4. The use of AI contributes to improving the effectiveness of internal controls and reducing reliance on traditional manual methods, leading to enhanced continuous monitoring and reduced legal and administrative risks.

5. AI-powered predictive analytics enables institutions to anticipate future risks and take appropriate preventative measures, thereby enhancing the quality of audit decisions and enabling a rapid response to potential deviations.

B. Recommendations

Based on the above conclusions, we recommend the following:

1. Banks should expand their use of artificial intelligence tools such as machine learning, natural language processing, and robotic process automation to improve compliance audit accuracy and reduce errors and deviations.

2. It is preferable to provide ongoing training programs for auditors on the effective use of modern technologies, focusing on integrating automated analysis with professional expertise to ensure the full utilization of AI capabilities in enhancing the quality of control and compliance.

3. It is recommended to use predictive analytics to continuously monitor financial and administrative processes, identify potential risks, and take corrective action quickly, thereby raising the level of compliance and operational efficiency.

4. It is advisable to develop regulatory frameworks and policies based on AI technologies to support reliability and transparency in compliance auditing, thereby enhancing compliance with internal regulations and financial laws.

5. It is essential to encourage future research into the role of AI-powered predictive analytics in predicting financial and administrative risks, with the aim of developing effective models to support audit decision-making.

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