



Article

The Impact of the Use of Electronic Audit Techniques on the Development of External Audit Quality (Field Study of a Sample of Audit Companies in Iraq)

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Abstract: In light of the business sector's rapid digital transformation and the new regulations put in place to boost audit efficiency and financial report reliability, this study sought to show how the use of electronic audit techniques has improved the quality of external audits in Iraqi audit firms. Despite the growing dependence on digital technology in professional activities, the study's issue is the paucity of field research that addresses the Integrated Impact of electronic audit methodologies in the Iraqi setting. The study sought to quantify the contribution of computerized audit programs, smart devices, and systems to improving the quality of external audits by examining the link and impact of the study variables. The data from 150 audit partners, audit managers, heads of the audit team, foreign auditors & assistant auditors in Iraqi Audit firms & offices used to analyze using software called SPSS. There is a high positive correlation between both variables. The outcome shown that the growth of external audit quality was rarely positively impacted by the employment of electronic audit techniques in a statistically meaningful way. The quality of financial reporting was backed by computerized audit programs, & smart systems effectively contributed to the detection of fraud & mistakes. The study recommends that Iraqi audit firms address digital transformation by investing in advanced technologies, developing a digital infrastructure, and increasing auditor training programs based on the outcomes of the research. As a result, financial accounts will be more reliable and services will be of higher quality.

Keywords: electronic audit, external audit quality, computerized audit programs, smart systems, Iraqi audit companies.

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1. Introduction

During the past few years, we noticed that the digital transformation process has accelerated globally and in all professions and economic activities, including the external audit profession that was increasingly dependent on technologies to perform its procedures, analyze data, and issue reports. Electronic auditing is a contemporary style of auditing that relies on the use of specialized software and electronic programs to improve and fortify the data analysis procedures in order to conduct audits more quickly and effectively than using conventional techniques. E-audit aims to improve the quality of the audit process by increasing accuracy, reduce time taken to implement procedures and enhance identification of errors and material misstatements. Additionally, it enhances the caliber of expert decisions made by external auditors & adds to the dependability of financial reports. The scientific literature on accounting has seen considerable increasing

attention recently to examine the influence of digital technologies on enhancing external audit quality, given that recent papers indicate that working with computerized audit programs, intelligent systems, artificial intelligence and big data analysis demonstrates a substantial positive impact in terms of facilitating more competent collection of evidence from audits improving the risk evaluation process bolstering early detection of fraud and financial errors and aiding professional judgment making in accordance to work structures associated with digital collaboration. In order to stay up with the rapid changes in the business environment and raise the standards for transparency, governance, and financial report quality, professional organizations & regulatory agencies have also turned to promoting the implementation of these technologies. This topic is significant because it integrates two key elements: technical development on the one hand, and the need to improve the quality of external audit on the other. The effective use of electronic audit techniques is one of the key factors to enhance the efficiency of professional performance, increase the reliability of accounting information, and increase the confidence of investors and stakeholders in the financial statements. It also highlights the applied importance of the study in the possibility of benefiting from its results in the development of audit practices within audit companies, and guiding professional bodies towards developing policies supporting digital transformation and developing auditors' skills in line with modern technical variables. Despite the increasing number of studies addressing e-audit applications, most of them focused on advanced economic environments or addressed a specific technology separately, while applied studies measuring the Integrated Impact of e-audit techniques on the development of external audit quality within Iraqi audit firms are still limited. This is emphasized in view of the ongoing difficulties related to the degree of digital technology adoption, technical infrastructure, and professional cadre qualification, which point to the presence of a knowledge and application gap that calls for more investigation and analysis. In order to prepare to present the research topic and describe its objectives and hypotheses in the following parts, the current study aims to investigate the impact of employing electronic audit techniques in raising the quality of external audit in the Iraqi environment.

2. Materials and Methods

2.1 Research Problem

The growth in the use of electronic audit technologies and contemporary digital systems has accelerated the development of external audit. This has improved the speed at which audit procedures are implemented, increased the accuracy of results, and decreased human error. Audit firms are also increasingly relying on computerized audit programs and intelligent systems to analyze financial statements and detect fraud and manipulation cases more efficiently. Hence, more work focusing on the implementation success rates of these techniques and their true effect on professional performance quality of the auditing profession and external audit skills, is needed to explore how far they could enhance most external audits within Iraqi audit practices. This leads us to phrasing the core problem of research as follows: "The effect of computerized auditing methods on the improvement of external audit quality at Iraqi audit firms." Hence, the sub-problems of the research can be enunciated in this manner:

- 1 . What is the impact of employing computerized audit tools on the quality & accuracy of financial reports?
- 2 . What is the impact of utilizing smart technologies in electronic auditing on increasing the identification of fraud and mistakes in the financial statements?

2.2 Research Importance

The relevance of modern digital technologies and their expanding contribution to the evolution of external audit processes and boosting the quality of professional performance via the following are the grounds for the research's importance:

1. The research is connected to the development of exterior electronic research.
2. offers a scientific framework that explains how intelligent systems and computerized audit programs may increase the effectiveness of external audit processes.
3. The project helps Iraqi audit firms provide recipients with more accurate accounting data along with higher-quality financial reports.
4. Research contributes to supporting confidence in financial statements by improving the detection of fraud and errors using modern electronic audit techniques.

2.3 Research Objectives

The objective of this research is to investigate how the use of Electronic Audit Techniques affects the quality development of external audit in Iraqi audit companies by:

1. elucidating the fundamental ideas behind electronic audit methods and their use in the contemporary auditing environment.
2. examination of the theoretical connection in the accounting literature between the quality of external audits and the usage of digital technology.
3. assessing how computerized audit methods affect the precision and quality of financial reports generated by Iraqi audit companies.
4. Testing the impact of employing smart technology in electronic auditing in enhancing the identification of fraud and inaccuracies in financial accounts.

2.4 Research Hypotheses

Given the research topic and its goals, it is believed that the deployment of electronic audit procedures has a moral influence on the improvement of external audit quality in Iraqi audit firms. The research's primary hypothesis might be stated as follows: "**The implementation of electronic auditing procedures has a statistically significant influence on the improvement of external audit quality at Iraqi audit companies,**" he said. The following sub-hypotheses can be based on the following sub-hypotheses:

- 1.Improving the accuracy and quality of financial reporting is statistically significantly impacted by the utilization of automated audit systems.
- 2.The use of smart technology in electronic auditing has a statistically significant impact on improving the detection of errors and fraud in financial statements.

2.5 Research Limits

The limits of this research determine the scope of the study in terms of time and space in accordance with the nature of the research problem and its goals.

1. time limits: the study is limited to the time period extended in 2026, because it represents the stage that witnessed a clear expansion in the use of electronic audit techniques within Iraqi audit companies, and the accompanying development of digital systems and modern accounting analysis tools.

2. spatial boundaries: In order to assess the effect of employing electronic audit techniques in improving the quality of external audit within the Iraqi professional setting, the study is restricted to a sample of audit firms in Iraq, namely accredited and working businesses for the profession of external audit.

2.6 Previous Studies

Previous Arab and foreign studies on research variables were discussed according to the following [1]. From the viewpoint of external auditors in the United Arab Emirates, the study sought to determine how the usage of artificial intelligence by external audit offices affected audit quality. The researchers adopted the quantitative method using a questionnaire distributed to 63 external audit companies, including local and international companies. The findings demonstrated the potential ethical benefits of using artificial intelligence technologies to improve audit quality, particularly with regard to risk assessment, increasing efficiency and effectiveness of data collection for evidence gathering with lower level of human errors as well as reducing time spent on auditing processes. Survey results showed that local and multinational audit firms adopt AI technology at different levels [2]. The aim of the study is to demonstrate a perspective, how expert systems could improve the quality of external auditing in Iraq. This employed a quantitative approach, spreading out a questionnaire to auditors working for the Federal Financial Control Bureau and audit workplaces. Analysable data was provided by 100 valid questionnaires in our sample. The findings indicated that expert systems improve audit effectiveness and efficiency, the quality of professional judgment, shorten the time to complete an operation (audit), and increase reliability of external audit conclusions. It also clarified that continued auditor training along with the provision of a suitable technological support system are essential for effective implementation of expert systems [3]. To put it more precisely, the goal of this study was to determine what aspects of digital availability have helped or impeded advances in auditing quality and how those changes impact improvements in audit quality with relation to the Iraqi environment. Utilizing a survey given to accounting and auditing specialists, the study employed a quantitative research approach and concentrated on four key technologies: cloud computing, big data, artificial intelligence, & blockchain technology. The findings demonstrated a statistically significant positive correlation between digital transformation and audit quality, and that the most crucial technologies for improving risk assessment, auditing process procedures, as well as the effectiveness of evidence gathering and analysis are big data analytics as well as artificial intelligence [4]. To explore and assess the evolution of that application we adopted a qualitative approach based on systematic review and analysis of research trends, including a total number of 465 papers published in the Scopus and Web Science databases. The findings demonstrated that because artificial intelligence facilitates automatic data management, it has emerged as one of the most significant technologies utilized in electronic auditing, continuous and early detection of fraud, improving audit evidence quality, and continuity of implementing into monitoring systems through periodic or continuous audits. However, its application is conditioned on the existence of digital governance and laws as well as on the qualifications (professional and technical) of the auditors. Our evaluation focuses on the research gap that was found about the applied influence of artificial intelligence on audit quality, particularly in emerging nations [5]. By precisising the digitalization effects and auditor effectiveness and independence in improving external audit quality, this study undertakes remote auditing environment with the systematic method (SLR) based on PRISMA protocol. This study was based on the analysis of twenty papers published from 2020 to 2025. The results indicated that the digitization (such as electronic audit techniques and data analysis) enhances audit quality within all stages of an audit process by increasing task effectiveness, decreasing execution time, and enhancing evidence-quality. But this effect is mainly contingent on the independence and competence of the auditor. Judging from the study, digital audit implementation needs not only that auditors must have new skills but also there has to be an update on professional standards [6]. The purpose of this study was therefore to conduct a literature review on AI Auditing from an ethical perspective and to analyse the ethical principles that ought to be observed when artificial intelligence is using in auditing. This study was conducted by various soldiers at the qualitative level and systematic

review on (93) studies published. The results showed that leveraging artificial intelligence in auditing enhances the ability to perform data analysis and risk identification, however clear governance, transparency of algorithms utilized and control mechanisms ensuring reliability and quality of audit output is needed for succeeding this. The study also called for the need for ethical considerations to be incorporated into electronic audit systems [7]. In this study, a regulatory and ethical framework for the application of artificial intelligence in external auditing was constructed and a systematic review methodology approach using qualitative research based on data from 21 studies published in the Scopus databases from 2020 to 2025 was adopted. The findings indicated that while artificial intelligence enhances the level of audit through risk assessment, data analysis and abnormal pattern detection, one of the largest impediments to successful effectuation is the lack of regulatory frameworks and professional standards. We also recommended that guidelines for governance on the application of AI in the auditing industry be created [8]. Reviewing the literature on artificial intelligence applications in external audit & examining the evolution of its usage in audit offices are the goals of this study. The systematic review of Q1 journals provided a qualitative approach to the study. The findings revealed that the application of artificial intelligence increases the quality of audits by raising the accuracy of error and fraud detection, strengthening Big Data Analysis, and bolstering the auditor's professional judgment. In addition to persistent problems with organization and expertise, there is a discernible disparity in the level of adoption of these technologies between major and small audit companies.

Following a study of a number of earlier studies on research variables, the following criteria will be utilized with respect to their analysis:

The Comparison Between Previous Studies

Previous studies can be classified according to four main axes: subject, curriculum, sector, and time period. In terms of subject matter, the studies focused on four main directions: the caliber of external audits, the use of artificial intelligence in auditing, electronic auditing, including the digital revolution in the auditing industry. While several studies concentrated on expert systems and digital transformation, the study of [1] examined the effect of AI on the caliber of external audits. More recent research has concentrated on systematic evaluations of AI applications, governance, and ethical aspects. In terms of methodology, the majority of Arab studies have relied on the quantitative method using the questionnaire and statistical data analysis, while most recent foreign studies have turned to systematic Literature Review or bibliometric studies to monitor research trends in electronic auditing and artificial intelligence. It is noted that applied field studies that combine more than one digital technology into one model are still limited, especially in developing environments. In terms of the sector, some studies were conducted on external audit firms, while others targeted legal or academic auditors or relied on the analysis of published literature without conducting a field study. He notes that most foreign studies have focused on advanced environments such as the UAE and Europe, while Applied Studies in the Iraqi environment are still limited. The majority of studies concur that the use of electronic audit technologies enhances the quality of external audits by speeding up the execution of audit procedures, improving data analysis, elevating the caliber of evidence, and strengthening the capacity to identify mistakes and financial fraud. The studies also confirmed that artificial intelligence and Big Data Analysis have become one of the most important tools supporting the professional judgment of an external auditor. While studies of the magnitude of impact of these technologies on organizations differed in what they presented, some targeted technical aspects, while others focused lectures on ethical and organizational features (the transparency of algorithms, data security, auditor independence from management influences and governance over artificial intelligence applications). And they also had completely diverse

intermediate variables, i.e., factors affecting the relationship between digital technologies and audit quality: for instance professional experience, digital infra and training level of auditors.

Research Gap

However, there are still several research gaps present within the scientific literature, specifically regarding studies that relate to AI and electronic auditing technology: almost all studies were limited to a single advanced technology, e.g., artificial intelligence or digital enterprise transformation technologies, and did not view e-audit technologies as an integrated suite of complementary components that incorporate facets, including AI-based approaches, expert systems, and analytical tools. Foreign studies have largely depended on systematic reviews/bibliometric studies, whereas field studies measuring real-world implementation at audit firms are still scarce. Most of the research has been done in well-established economic environments, whereas there is a noticeable absence of Applied research that has addressed either Iraqi audit businesses or other Arab contexts with similar organizational traits. Many studies have focused on enhancing the effectiveness of the audit process, but few have comprehensively addressed the effect of e-audit techniques across all aspects of external audit quality, including evidence quality, professional skepticism, material misstatement detection, and report quality. The present study provides an integrated model that links the various e-audit practices and external audit quality within a single analytical model, unlike most of the previous studies.

The Added Value of the Current Study

The present study derives its scientific significance by virtue of its remedial nature to a number of weaknesses evidenced in the prior investigations. The research utilizes a comprehensive e-audit model comprising of AI, expert systems and big data analytics rather than focusing on one technology. This makes it possible to measure the complete effect of different technologies on the enhancement of external audit clarity. The research is also distinguished by its focus on the Iraqi Environment, this environment which still suffers from Constraints of Applied Studies in Digital Transformation of Auditing domain; hence adding scientific and practical importance to the results for decision makers and audit office. Moreover, the present study depends on field data obtained from Iraqi audit companies, which adds to providing practical evidence about adopting electronic audit techniques reality and the factors affecting their success. The findings from the study can also assist professional and regulatory bodies in formulating policy to address challenges arising from digital transformation of the audit profession, developing auditor training programs and revising audit standards to reflect recent technological developments. Theoretical contribution: The study provides for the Arabic literature in accounting, a model unifying several digital technologies within a single umbrella framework that allows for more profound understanding of the relationship between digital transformation and external audit quality. It has also opened up additional avenues for research that focuses on intermediaries or moderators such as digital efficiency, professional skepticism and governance of artificial intelligence.

3. Electronic Audit

3.1 The Electronic Audit Concept

Due to digital transformation and businesses' use of information technology, electronic audit has emerged as one of the most significant advancements in the audit profession, which have enhanced the efficiency of audit procedures and the precision of evaluating electronic evidence. The process of implementing audit procedures, gathering electronic evidence, and evaluating it effectively using digital technologies, specialized

software, and data analytics is known as "electronic audit." This improves audit quality and increases the dependability of results in digital business environments [9]. The term "e-audit" refers to an audit methodology that uses electronic applications and digital governance techniques in the execution of tests, data analysis, and evidence preparation. This approach increases the effectiveness of the auditor's work in the digital world and improves audit quality [10].

3.2 Characteristics of Electronic Audit

A number of features differentiate the electronic audit process from a traditional audit, according to Hakim et al. [11], electronic audit depends on digital systems for the execution of audit procedures, which makes it possible to process massive volumes of data fast and precisely, improves the quality of electronic evidence, boosts the effectiveness of error detection and corruption indicators, and improves the audit process itself. Additionally, he clarified. [12] One of the most notable features of electronic auditing is its capacity to lower audit risks through the use of accounting information systems and electronic internal control, automatic testing, and rapid information access, all of which enhance the caliber of the auditor's report and increase the dependability of audit findings. On the other hand, a study [13] That e-audit is characterized by relying on the technical competencies of auditors, their independence, the use of contemporary electronic applications, as well as its capacity to perform Continuous Audit and data analysis in real-time, which improves the quality of outputs in the digital corporate environment and increases the audit process' efficiency.

3.3 Advantages and Disadvantages of Electronic Audit

According to recent research, electronic auditing has several benefits that raise the standard of the audit process; yet, there are organizational, human, and technological barriers to its implementation. According to the study [12], electronic auditing is able to speed up audit procedures, allowing auditors to analyze countless data in a matter of time and reducing the risk associated with audits while increasing internal control effectiveness; improving the quality of reports performed by providing accurate and reliable audit evidence. However, the study noted that serious barriers remain, including high costs associated with technical infrastructure; the need to continuously update systems; and a shortage of trained staff to use electronic audit applications. In another study [14], adoption of electronic auditing system helps to increase the effectiveness of internal audit departments, giving more time for completing tasks quickly, improving data analysis and decision-making accuracy, supporting continuous audit and less dependence on manual procedures. But its implementation is not without challenges, including resistance to change, the limited digital skills of some auditors and high costs for training and development. Furthermore, there are significant risks concerning information security issues or cyber risk. In addition, one more study [15] stated that e-auditing has been enhanced because of digital innovations like artificial intelligence, big data analytics, blockchain technology, robotic process automation have improved audit evidence quality and efficacy in error and fraud detection and financial report reliability. Nevertheless, emerging technologies are difficult to implement: vitamins for regulatory upheaval and professional performance standards that keep pace with digital transformation while shielding it from technical risk, their costs of entry are high and appropriate technical expertise is scarce.

3.4 Electronic Audit Techniques

With Digital Transformation, the electronic auditing techniques also evolved a long way and became more reliant on advanced tools and technologies that can help auditors inspect data better than what traditional audit methods offer. Research [16] has revealed the most significant technologies for electronic auditing: big data analytics, artificial intelligence, blockchain and continuous auditing. These technologies boost the efficiency and quality of the audit process by enabling the examination of 100% of all financial transactions (instead of depending on samples), encouraging early identification and detection of mistakes and fraud, and providing trustworthy (real-time) audit proof. A different research [17] also added that contemporary electronic auditing techniques are even more specialized and include computer-assisted audit techniques (CAATs), artificial intelligence (AI), machine learning, blockchain, and data analytics. Such tools are utilized to automate the auditing process, enhance risk-assessment procedures, improve fraud detection efficiencies and assist in auditors professional judgment in doing audits of digital businesses. In addition, research [18] identifies continuous auditing systems using modern electronic monitoring technologies of processes based on real-time information, automation, continuous cycle for data acquisition and analysis as one of the most significant modern e-auditing technologies applied, used to detect deviations/irregularities generating alerts. They provide real-time monitoring, shorten the time it takes to identify errors and make auditors four times more productive especially when auditing intelligent systems in these complex digital environments.

4. Quality External Audit

4.1 The External Audit Quality Concept

One of the key ideas in the auditing profession is the external audit's quality, which reflects the ability of an external auditor to do an independent audit process that meets professional standards to increase reliable financial statements. The degree to which the audit process independently and credibly confirms that the financial statements are free from major misstatements via the proper use of efficient audit methods is the quality of an external audit, use of professional standards, independence from company management while generating sufficient and relevant audit evidence [19]. To justify the issuance of a reliable audit opinion that increases the confidence in financial reports, external auditors must find an equilibrium point between adherence to professional standards, the level of documentation done on the audit work performed and value added for stakeholders. This is called the external audit quality [20].

4.2 External Audit Quality Indicators

Some use quality indicators that cover perceived quality to measure a concept that is directly related to the auditor's performance of an audit in compliance with professional standards. This concept is known as reasonable assurance that the financial statements are free of material misstatements due to error or fraud. The quality of financial statements and the detection of errors and fraud are among the most important indicators used to assess external audit quality. A study conducted [19] stated that External audit quality is determined by the auditor obtaining sufficient and appropriate evidence to issue a reliable professional opinion. This is illustrated through enhanced quality and accuracy of financial reports, a lower risk of material misstatements, and greater investor and stakeholder confidence in financial information. The study further said audit quality is correlated naturally with the ability of the auditor to detect material misstatements and report these in accordance with professional practice. Additionally, another research [21] revealed that fraud detection in financial statements is one of the most significant practical indicators of external audit quality. The right level of professional skepticism, a good assessment of the

risks associated with fraudulent behavior and a set of practical and suitable audit procedures contributes to improving audit quality as well as increases the likelihood that an auditor will be able to detect fraudulent actions and significant inaccuracies in financial statements, increase the credibility of our reporting information and decrease the risk of inappropriate investment decisions. The factors that indicate the quality of external audit [22]. It demonstrated that one of the biggest advantages would be to demonstrate how well the external audit process protects users of financial statements by enhancing the caliber of financial reporting and more successfully identifying fraud & mistakes.

4.3 The Relationship Between Electronic Audit and the Quality of External Audit

Computer-Assisted Audit techniques (CAATs) is counted among the most significant electronic audit applications that has helped to improve external auditing quality by allowing auditor to analyze massive volumes of financial data fast and accurately rather than depending solely on traditional sampling approach. These tools enable the performance of comprehensive control and substantive testing by detecting anomalies and deviations. This enhances the reliability and relevance of financial reports for decision-making purposes. These technologies also help to be efficient in the audit process and reduce the human error probability as well as provide sufficient and relevant audit evidence, which is one of the most fundamental determinants of external audit quality by auditors [23]; [24]. However, as machine learning technologies, big data analysis, and smart algorithms have made it possible to identify fraud patterns and accounting errors that are challenging to identify using conventional methods, the usage of artificial intelligence & intelligent technologies in the electronic audit environment has accelerated in the auditing profession. In addition to continually evaluating risks and anticipating fraud indications, these systems assist in studying the full data community rather than just samples, which improves the caliber of external audits and boosts trust in the financial statements that are made public. By supplying precise analytical data to aid in decision-making throughout the audit process, artificial intelligence also improves the efficacy of the auditor's professional judgment [25]; [26]. There are a number of these mechanisms between these mechanisms between these mechanisms between these mechanisms between the following. Additionally, it is consistent with signaling theory, since improvements in financial report quality brought about by the use of computerized audit techniques give investors encouraging signals on the reliability of reported financial data. The resource-Based view theory also supports investing in smart technologies as a strategic resource that achieves a competitive advantage for audit offices by improving the quality of their services and professional efficiency, while the information processing Theory asserts that the use of smart systems increases the auditor's ability to process complex data and make more accurate decisions in digital business environments, which directly affects the quality of external audit. The aforementioned makes it clear that one of the most important electronic audit tools is the use of computerized audit programs and smart systems. These tools raise the external auditor's capacity to identify fraud and mistakes in the financial statements, which enhances the external audit's quality. They also improve the accuracy and quality of financial works. Despite the growing corpus of theoretical and practical data, the current study aims to assess the necessity for a field study that looks at the extent of implementation of these strategies as well as their actual impact on improving the quality of external audit.

5. Results and Discussion

5.1 Community, Study Sample, and Tools

By examining the literature and earlier research on electronic audit methods and the caliber of external audits, the study used a descriptive-analytical theoretical approach. On the other hand, the practical aspect employed a field approach. The data was collected using a questionnaire with two main axes for assessing the research variables on a five-point Likert scale, which was based on pertinent literature. Employees of Iraqi offices and foreign audit firms were given 160 questionnaires. The sample comprised audit partners, audit managers, heads of audit teams, external auditors, and assistant auditors. Because they work with electronic audit techniques and are aware of the quality level of external audit, they are best suited to provide accurate and objective answers to the questionnaire paragraphs, resulting in 150 valid questionnaires for statistical analysis. The data was analyzed using SPSS utilizing descriptive statistics, correlation analysis, linear regression, T-tests, including the Cronbach's Alpha stability test to evaluate the study hypotheses.

5.2 Examination of the Research Sample's Demographic Features

Table 1. The research sample's demographic features.

Categories	Type	Number	Percentage
Years of experience	1-5 years	64	42.67%
	6-10 years	28	18.67%
	11-15 years	36	24.00%
	old More than 15 years	22	14.67%
	Total	150	100%
Educational attainment	Bachelor	86	57.33%
	Masters	40	26.67%
	Ph. D.	24	16.00%
	Total	150	100%
Functional nature	Audit partners	20	13.33%
	Audit managers	32	21.34%
	Heads of audit teams	36	24.00%
	External auditors	42	28.00%
	Assistant auditors	20	13.33%
	Total	150	100%

The researcher created the table using the SPSS v29 software based on the analysis's findings.

The most representative group in terms of years of experience, according to the table, is (1–5 years), with numerous (64) and a percentage of (42.67%), followed by (11–15 years) with (24.00%), (6–10 years) with (18.67%), and (above 15 years) with (14.67%). This distribution shows that a variety of current, medium, and high-level experienced auditors are included in the sample, which contributes to a range of viewpoints regarding the influence of electronic audit technologies on the advancement of external audit quality. The majority of respondents had a bachelor's degree (57.33%), followed by master's degrees (26.67%) & PhD students (16.00%). In terms of the functional nature, the category of external auditors ranked first (28.00%), followed by the category of heads of audit teams (24.00%), then audit managers (21.34%), while the percentage of audit partners and assistant auditors reached (13.33%). This functional diversity reflects an appropriate representation of different professional levels within audit companies, which enhances the accuracy of the results and the possibility of their dissemination to the study community.

5.3 Measuring the Reliability of the Study Tool

Table 2. stability test (Cronbach's Alpha & Item-Total Correlation).

Phrases: Computerized audit programs improve the quality and accuracy of financial reports	Kronbach's correlation coefficient and item-sum correlation coefficient	Phrases Smart systems in electronic auditing improve the detection of fraud and errors in financial statements	Kronbach's correlation coefficient and item-sum correlation coefficient
X1	0.724	Y1	0.748
X2	0.769	Y2	0.781
X3	0.743	Y3	0.812
X4	0.788	Y4	0.794
X5	0.761	Y5	0.826
X6	0.803	Y6	0.837
X7	0.782	Y7	0.805
X8	0.816	Y8	0.851
Cronbach Alpha Coefficient	0.913	Cronbach Alpha Coefficient	0.932

The researcher created the table using the SPSS v29 software based on the analysis's findings.

The coefficients of the item's correlation with the sum for the first axis ranged between (0.724-0.816), and they are all higher than the acceptable limit (0.30), which indicates the consistency of the paragraphs with the axis. The homogeneity of the paragraphs is shown by the strong coefficients of correlation between the item and the total for the second axis, which varied from 0.748 to 0.851. A very high degree of internal stability is shown by the Cronbach's Alpha coefficients for the first and second axes, which were 0.913 and 0.932, respectively. All of the research variations' paragraphs are consistent with the axis to which they belong. The study tool having a slight stability over time and high internal consistency, evaluating its validity of internal consistency has shown acceptable correlation coefficient and Cronbach's Alpha coefficient values.

Table 3. Cronbach's alpha coefficient.

Variables	Cronbach Alpha Coefficient
Computerized audit programs improve the quality and accuracy of financial reports.	0.913
The identification of fraud and inaccuracies in financial accounts is enhanced by smart technologies in electronic auditing.	0.932
The questionnaire as a whole	0.923

The researcher created the table using the SPSS v29 software based on the analysis's findings.

The coefficients of the item's correlation with the sum for the first axis ranged between (0.724-0.816), and they are all higher than the acceptable limit (0.30), which indicates the consistency of the paragraphs with the axis. The homogeneity of the paragraphs is shown by the strong coefficients of correlation between the item and the total for the second axis, which varied from 0.748 to 0.851. A very high degree of internal stability is shown by the Cronbach's Alpha coefficients for the first and second axes, which were 0.913 and 0.932, respectively. There is an indication of the consistency of all paragraphs of the study

variants with the axes to which they belong. The results of the correlation coefficient & Cronbach's Alpha coefficient demonstrate the study instrument's excellent level of internal stability and consistency, and it measures what it was designed to test well in terms of the authenticity of internal consistency.

5.4 Search Variable Descriptive Statistics

- A. The accuracy and caliber of financial reporting are statistically significantly impacted by the use of computerized audit instruments.

Table 4. descriptive statistics of the first axis's paragraphs.

Paragraphs	questionnaire paragraphs	arithmetic mean	standard error	standard deviation	relative importance
1	Computerized audit programs contribute to the rapid and accurate processing of large volumes of financial statements, which enhances the accuracy of financial reporting	4.41	0.051	0.62	88.20
2	The use of computerized audit programs reduces data entry and processing errors, which raises the level of reliability of financial information	4.46	0.049	0.60	89.20
3	Computerized audit programs help analyze financial statements and detect errors and deviations that may be difficult to detect with traditional methods	4.53	0.046	0.57	90.60
4	By identifying mistakes and inconsistencies early on, computerized audit methods help to improve the accuracy of financial accounts.	4.49	0.047	0.58	89.80
5	Computerized audit software supports the audit risk assessment process by comprehensively and systematically analyzing financial statements	4.37	0.053	0.65	87.40
6	The use of computerized audit software contributes to improving the level of transparency and financial disclosure by providing more accurate and objective audit evidence	4.44	0.050	0.61	88.80
7	Computerized audit programs contribute to the preparation of electronic audit reports that are accurate, clear, and easy to view the results	4.39	0.052	0.64	87.80
8	The use of computerized audit software reduces the time required for the completion of the audit	4.47	0.048	0.59	89.40

process and the timely issuance of financial reports					
The first Computerized audit programs improved the quality and accuracy of financial reports	4.45	0.050	0.61	89.00	

The researcher created the table using the SPSS v29 software based on the analysis's findings.

The overall arithmetic average for the axis reached (4.45) out of five points, and the relative importance reached (89.00%), indicating that there is agreement among the study sample members regarding the beneficial role of computerized audit programs in improving the quality as well as accuracy of financial reports, which is a high percentage indicates to researchers ' awareness about the important role played by these programs in development external audit procedures. While the standard error was (0.050), a measure of the accuracy of estimating the averages and the suitability of the sample size used, the overall standard deviation was (0.61), a relatively low deviation that shows the convergence of the respondents' opinions and the low degree of dispersion between them. The third-ranked paragraph at the arithmetic mean (4.53) and relative relevance (90.60%) shows that computerized audit systems aid in the detection of flaws and variances in financial statement analysis that are challenging to find using conventional methods, reflects the belief of respondents about adding value to these programs and improving quality of audit process. The eighth paragraph, with an average of 4.47, and the fourth paragraph, with an average of 4.49, came in second and third, respectively. These results demonstrate the importance of computerized audit programs in identifying errors and discrepancies early on and in cutting down on the time needed to finish the audit process and provide financial reports on time. The lowest arithmetic mean (4.37) was found in the fifth paragraph. Although to a smaller degree than other aspects, this average falls within the high level of agreement, suggesting that respondents think computerized audit technologies greatly enhance Audit Risk Assessment. The first sub-hypothesis is supported by the results, which generally show an increase in all arithmetic averages above the level of (4.30), with relative importance ranging between (87.40%) and (90.60%). This indicates that the use of computerized audit programs significantly increases the quality and accuracy of financial reports through increasing data analysis accuracy, reducing errors in assessing and processing financial information, increasing reliability in providing financial information increase efficiency and effectiveness (efficiency flow) external auditors in auditing financial statements.

B. The improvement of financial statement fraud and mistake detection is statistically significantly impacted by the deployment of intelligent technologies in electronic auditing.

Table 5. Paragraphs' descriptive statistics from the second axis.

Paragraphs	questionnaire paragraphs	arithmetic mean	standard error	standard deviation	relative importance
1	Intelligent systems contribute to the accurate analysis of large volumes of financial statements, which helps to detect accounting errors more efficiently	4.56	0.044	0.54	91.20
2	The use of intelligent systems enhances the auditor's ability to identify non-apparent accounting errors through advanced analysis of financial statements	4.49	0.047	0.58	89.80

3	Intelligent systems provide analytical information that supports the auditor's decisions in identifying possible cases of financial fraud	4.52	0.046	0.56	90.40
4	The use of Intelligent Systems helps the auditor in evaluating evidence and selecting appropriate audit procedures to detect financial fraud	4.47	0.048	0.59	89.40
5	Intelligent systems contribute to the detection of abnormal patterns in financial statements that may indicate the presence of errors or frauds	4.61	0.042	0.52	92.20
6	The adoption of intelligent technology boosts the auditor's capacity to discover early symptoms of fraud and substantial mistakes in the financial statements	4.58	0.043	0.53	91.60
7	Automation of audit procedures using intelligent systems contributes to increasing the efficiency of data checks and error detection	4.50	0.046	0.57	90.00
8	The use of intelligent systems in the automation of audit procedures improves the speed and accuracy of error detection compared to traditional procedures	4.55	0.045	0.55	91.00
The second axis, smart systems in electronic auditing, enhances the ability to identify financial statement fraud and inaccuracies.		4.54	0.045	0.56	90.70

The researcher created the table using the SPSS v29 software based on the analysis's findings.

As shown in the graph above, respondents indicated a high level of agreement on any use of intelligent systems (i.e., expert and adaptive) in electronic auditing to increase the robustness of audit evidence and aid in identifying fraud and errors in financial statements. The general arithmetic average of the axis, which received a score of 4.54 out of five, reflects the research sample members' comprehension of how smart technologies might enhance the caliber of external audits. This is a high degree similar to the relative importance of (90.70%). Furthermore, the aggregate standard deviation dropped to a comparatively low level of 0.56, demonstrating a high level of response homogeneity as well as the convergence of respondents' opinions. However, the standard error reached 0.045, demonstrating the high accuracy of statistical average prediction as well as the suitability of the hypothetical sample size. The fifth paragraph, which ranked first at the paragraph level with an arithmetic average of 4.61 and relative importance of 92.20%, reflects the respondents' belief that smart systems have a high ability to detect abnormal patterns in financial statements, which contributes to the early detection of errors and financial fraud. While the sixth paragraph was ranked second, with an average of 4.58, which indicates the importance of smart systems in the early detection of signs of fraud and major errors. The first paragraph ranked third with an average of 4.56, confirming the active role of intelligent systems in analyzing large amounts of financial data with high efficiency. Despite having the lowest arithmetic mean (4.47), the fourth paragraph is still in the upper range of agreement, indicating that respondents believe smart systems significantly, though not as much as the other paragraphs, support the evaluation of the evidence and the selection of appropriate audit procedures. In general, the arithmetic

averages ranged from (4.47–4.61), while the relative importance ranged from (89.40% - 92.20%), which reflects a clear positive trend towards the adoption of smart systems in electronic auditing. By demonstrating the existence of a statistically significant positive impact of the use of smart systems in enhancing the detection of fraud and errors in the financial statements through increased data analysis efficacy, improved evidence assessment accuracy, accelerated financial risk detection, and increased dependability of audit outputs, these findings support the second sub-hypothesis.

5.5 Examining and Evaluating Research Factors

A. Examining the First Hypothesis

The first sub-hypothesis was tested by comparing the arithmetic mean of the respondents' responses with the hypothetical average of scale (3) in the five-point Likert scale using the Test (T for one sample – One Sample T-Test) in order to determine whether the use of computerized audit programs improves the quality and accuracy of financial reports in a way that is statistically significant.

Table 6. applying the (T) test to test the first sub-hypothesis.

Statistical indicators	Estimated parameters
Arithmetic mean	4.45
Standard deviation	0.61
Standard error	0.050
Differences of means	1.45
Hypothetical arithmetic mean	3.00
Degree of freedom	149
(T-Test) calculated	29.00
(T-Test) Tabular	1.976
Moral significance	0.000
The decision	accept the hypothesis

The researcher created the table using the SPSS v29 software based on the analysis's findings.

The results of the one-sample t-test showed that the mean on first axis had an absolute value of 4.45, which is above the hypothetical average of 3.00 (average difference = 1.45). This significant gap is a representation of the positive perception towards computerized audit programs amongst respondents regarding the factor that they contribute to enhancing the quality, reliability and accuracy of financial reporting. This conclusion is reinforced by the statistical analysis also, with a significance level of 0.000 which falls well below the standard significance threshold of 0.05 indicating that this rise in proportion was statistically significant rather than chance occurrence. Additionally, while the tabulated t-value at 149 degree of freedom and 0.05 significance level is only 1.976, therefore the calculated t-value of 29.00 strongly support the hypothesis that computerized audit programs improves financial reporting practices. As a result, the hypothesis is accepted, supporting the study's first sub-hypothesis by demonstrating that the adoption of computerized audit tools improves the quality and accuracy of financial reports in a statistically significant way.

B. Testing the Second Hypothesis

The Test (T for one sample – One Sample T-Test), which contrasts the arithmetic mean of the respondents' answers with the hypothetical average of scale (3) in the five-point Likert scale, was used to test the first sub-hypothesis, to see if the use of intelligent systems in electronic auditing improves the detection of errors and fraud in financial statements.

Table 7. utilizing the (T) test to test the second sub-hypothesis.

Statistical indicators	Estimated parameters
Arithmetic mean	4.54
Standard deviation	0.56
Standard error	0.045
Differences of means	1.54
Hypothetical arithmetic mean	3.00
Degree of freedom	149
(T-Test) calculated	34.22
(T-Test) Tabular	1.976
Moral significance	0.000
The decision	accept the hypothesis

The researcher created the table using SPSS v29 based on the analysis's findings.

The One Sample T-Test findings show that the second axis' arithmetic average was (4.54), which was higher than its supposed arithmetic mean of (3.00) with an average difference of (1.54), which in turn proves to be significant as agreement among every single respondent much so on both main axes on what intelligent systems through electronic auditing can play a role towards better capturing fraud cases, and errors associated with financial statements situations. Since it is equal to (1.976), the computed value of (T) was (34.22), which is higher than the tabular value. at a significant level (0.05), and a degree of freedom (149), with significance (0.000) less than significance(0.05). Consequently, this supports H1 and provides evidence for the second sub-hypothesis of the study because it indicates that intelligent technologies in electronic auditing are significantly affected by identifying fraud and errors in financial statements.

5.6 Correlation Analysis for the Study of the Relationship Between Research Variables

The correlation between the growth of external audit quality & the adoption of electronic audit technology.

Table 8. Results of correlation analysis between the adoption of electronic audit techniques and the growth of external audit quality using the Pearson correlation coefficient.

Variables	Correlation coefficient (Pearson r)	level of significance (Sig.)	Nature of the relationship	Decision
Computerized audit programs in the development of external audit quality	0.812	0.000	Strong positive	A statistical function
Smart systems in electronic auditing in the development of external audit quality	0.846	0.000	Strong positive	A statistical function
The development of external audit quality via the use of electronic audit procedures (in general)	0.879	0.000	A very strong positive	A statistical function

The researcher created the table using the SPSS v29 software based on the analysis's findings.

The improvement of external audit quality and the implementation of electronic audit technologies are substantially positively associated, according to correlation research results applying the Pearson correlation coefficient. The quality of external audits and computerized audit programs has a correlation value of 0.812. Nonetheless, there was a statistically significant function at the level of (0.000) as well as a meaningful association with a correlation value of (0.846), which is less than (0.05), between intelligent systems in electronic audit and the quality of external audit. The coefficient reflects that the overall relation between: use of electronic audit techniques and development of external audit quality also reached (0.879) which represents a very positive relationship, i.e., the more increase in usage level of electronic audit techniques the increase in external audit quality in term of accuracy, reliability, and efficiency against error detections and fraud etc., this validated with theoretical framework to support testing independent variable impact on dependent variable by going through regression analysis approach.

5.7 Regression Analysis

Table 9. findings from a straightforward regression analysis to gauge how the application of electronic auditing methods affects the improvement of external audit quality.

Statistical indicators	Estimated parameters
The independent variable	Use of electronic audit techniques
The dependent variable	Developing the quality of the external audit
Correlation coefficient (R)	0.879
Coefficient of determination (R ²)	0.773
Adjusted selection coefficient (Adjusted R ²)	0.771
Calculated value (F)	504.37
The level of significance (Sig.)	0.000
Regression coefficient (β)	0.879
Calculated value (t)	22.46
The decision	accept the hypothesis

The researcher created the table using the SPSS v29 software based on the analysis's findings.

The outcomes of a straightforward regression analysis to gauge how the application of electronic auditing methods affects the advancement of external audit quality. Basic regression analysis shows that using electronic audit technologies has a positive and strong impact on the formation of external audit quality. The coefficient of identification was (R² = 0.773), which means that the use of electronic audit techniques is responsible for 77.3% of the changes in the quality of external audit, while the remaining percentage corresponds to other factors not included in the model developed in this study. The correlation coefficient (R = 0.879) confirms this strong correlation between these two variables, as for the (F) value calculated (504.37), which was also at the significance level of (0.000), which is less than (0.05), and thus the significance of the regression model as a whole. Since the standardized regression coefficient (β) is also reached to (0.879,) and the value calculated by (t) was (22,46) which is considered a high value and show a statistically significant function meaning that for every increase in use of electronic audit techniques there be impact confirming its real role to improve external audit quality Consequently, the study hypothesis that electronic audit technology utilization has a substantial influence on external audit quality enhancement is accepted.

5.8 Results and Discussion

The results of correlation and regression analysis, which demonstrated a very strong correlation between the two variables ($R=0.879$), the ability of electronic audit techniques to explain changes in the quality of external audit (77.3%), and the statistical significance of the regression model ($\text{Sig}=0.000$), confirm the validity of the study's main hypothesis as well as the validity of the two sub-hypotheses pertaining to the use of computerized audit programs and intelligent systems. These findings indicated a positive and ethical development of the external audit. Furthermore, the outcomes of the (T) test proved great consensus among auditors on the positive influence of these technologies towards improving external audit quality by showing that the averages of respondents' answers were significantly above the average. Those discoveries are likewise firmly identified with that reason of the examination to investigate the impact of keen frameworks and computerized review programs on improving the angle size of monetary announcing and misrepresentation/erroneous identification. The findings show that using computerized audit systems expedites audit completion, lowers human error, and aids in correct financial statement interpretation. The rise in the averages of the two axes to (4.45) and (4.54), respectively, can be explained by Intelligent Systems' superior capacity to identify anomalous patterns and forecast signs of financial crime. The current study's findings are in line with the majority of the earlier research included in the theoretical framework. These findings align with the research of [2], which verified that expert systems increase audit efficiency and enhance the caliber of professional judgment; the research of [1], which demonstrated the beneficial effects of artificial intelligence on improving external audit quality; and the research of [3], which showed that big data analysis and artificial intelligence technologies are the most significant digital transformation tools in audit quality. The findings align with the findings of the systematic studies of [4], [5], and [8], which verified that digital audit technologies improve fraud detection, raise the effectiveness of audit procedures, and improve the quality of audit evidence while highlighting the significance of governance, training, and supporting legislation. Since the adoption of electronic audit procedures minimizes information asymmetry by giving more trustworthy audit evidence, these effects may be scientifically justified in light of agency theory and information processing theory. Smart technology enhances the auditor's capacity to examine extensive financial data and find any substantial misstatements that would not be found using traditional audit techniques, and therefore addresses the quality of professional judgments, but also allows for accuracy in financial reporting. This study has important real implications by providing some findings that give guidance for Iraqi audit firms and professional associations in the process of developing strategies to deal with digital transformation as they compose training programs and encourage investment until knowledge is provided around artificial intelligence applications and electronic auditing technologies, while striving towards improving the quality of professional audit services. Additionally, the study has scientific significance; it provides empirical evidence affirming an increasing body of knowledge that points to the role of emerging digital technologies as enablers to advance auditing even further. Interestingly enough, in comparison to computerized audit programs, the impact of smart systems is relatively more significant, reflecting that some applications of artificial intelligence offer analytic and predictive capacities that go beyond those previously available through conventional audit software. But this advantage still relies on the availability of suitable technological and human resources, which also concurs with previous studies. It was also only conducted on a sample of Iraqi audit firms in 2026, and data were based on a questionnaire that relied more on the perceptions of respondents than on objective measures of how things are actually performed. In addition, only two independent variables were included in the research model, where others, such as professional experience, digital governance,

and the level of technological maturity, may also play a role in audit quality. This leaves room for future studies to explore these variables in more extensive research models. While the study produced strong results, these limitations should be considered when evaluating the findings.

6. Conclusions and Recommendations

Theoretical and Applied Conclusions

For example, the basis of theoretical and empirical results and expert recommendations could be formulated as follows, using statistical data and discussions provided in the study:

1. The study's conclusions demonstrated that electronic audit methods significantly and favorably raise the caliber of external audits. Increasing the use of electronic audit techniques immediately increases the professional performance of the external auditor, as demonstrated by the significant positive association between the two variables found by regression and correlation analysis.

2. By accelerating data processing, reducing human error, and increasing accounting information reliability, all of which have a favorable effect on the quality of audit process outputs, the study showed how employing computerized audit systems enhances the accuracy and quality of financial reports.

3. According to the study, smart systems are more successful in identifying mistakes and financial fraud because of their high capacity to analyze massive volumes of data and identify anomalous patterns and early signs of fraud. This improves the caliber of audit evidence and raises auditors' level of professional skepticism.

4. The findings confirmed the hypothesis that greater use of electronic audit techniques leads to more accurate and objective audit evidence, better risk assessment, and greater reliability of financial statements, which also supports the confidence of both investors and other stakeholders in financial information.

5. The study showed that electronic audit techniques have become one of the basic components of digital transformation in the external audit profession, as they contribute to raising the efficiency of audit procedures, speeding up the completion of tasks, and improving the quality of professional judgments, in line with modern trends in the accounting literature.

6. The results showed that achieving the full benefit of e-audit does not depend on technology alone, but is also linked to the availability of digital infrastructure, the qualification of auditors, the development of regulatory frameworks and professional standards supporting digital transformation, which enhances the sustainability of the quality of external audit.

Professional Recommendations

1. To improve auditors' proficiency with digital technologies, more training and professional development programs in artificial intelligence, big data analysis, and electronic auditing are being offered.

2. Encouraging audit firms and offices to implement smart technology at every level of the audit process due to their ability to increase the quality of professional judgments and improve the identification of fraud and mistakes.

3. Investing in the development of technological infrastructure within audit companies, through updating software, enhancing information security, and providing integrated databases that support the application of electronic audit.

4. professional bodies and regulators update auditing standards and professional instructions in line with the requirements of the digital environment, and keep pace with the accelerated developments in artificial intelligence applications and electronic auditing.

5. Future study should investigate the impact of intermediate elements, such as the auditor's digital competence, digital governance, and professional doubt, on the relationship between electronic audit and the quality of external audit.

6. A suggestion for a future study would be to compare Iraqi audit firms with those in Arab or foreign nations in order to gauge the degree of adoption of artificial intelligence and electronic audit technologies, as well as their influence on raising the caliber of financial and audit reports and thereby promoting Best Professional Practices.

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