

The Impact of Electronic Accounting Information Systems on Auditing: A Field Study of a Sample of Audit Practitioners in Batna Province

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Abstract:

This study analyzes the impact of using electronic accounting information systems on audit practice and assesses their contribution to improving the efficiency and effectiveness of audit procedures and the quality of accounting information available to auditors. The empirical component used a questionnaire to collect data, which were then analyzed using SPSS.

The study concludes that electronic accounting information systems affect audit objectives and the development of the audit process because audit inputs are the outputs of these systems. This has led to the emergence of new audit and control procedures and methods, as well as the modification and adaptation of standards to suit this modern environment.

Keywords: information system; accounting information; electronic accounting information system; auditing.

JEL Classification: L15, M40, M42.

Résumé :

Cette étude analyse l'impact de l'utilisation des systèmes d'information comptable électroniques sur la pratique de l'audit et évalue leur contribution à l'amélioration de l'efficacité et de l'efficience des procédures d'audit ainsi que de la qualité des informations comptables mises à la disposition des auditeurs. Dans le cadre de la partie empirique, un questionnaire a été utilisé pour collecter des données, qui ont ensuite été analysées à l'aide du logiciel SPSS. L'étude conclut que les systèmes d'information comptable électroniques ont une incidence sur les objectifs d'audit et l'élaboration du processus d'audit, car les données d'entrée de l'audit proviennent de ces systèmes. Cela a conduit à l'émergence de nouvelles procédures et méthodes d'audit et de contrôle, ainsi qu'à la modification et à l'adaptation des normes afin de les adapter à cet environnement moderne.

Mots-clés : système d'information ; informations comptables ; système d'information comptable électronique ; audit.

Classification JEL : L15, M40, M42.

Introduction:

The rapid pace of technological development, coupled with the digital transformation taking place in organizations, has brought accelerated changes to the field of accounting. This has led to increasing reliance on electronic accounting information systems for data processing and the production of financial information. These developments have, in turn, affected audit practice, including the methods and procedures used to examine data, evaluate internal control systems, and collect audit evidence. The electronic environment has also required auditors to acquire technical skills that enable them to assess the reliability of data and the integrity of its processing.

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Research Problem:

In light of the foregoing, the main research question may be stated as follows:

What is the impact of electronic accounting information systems on auditing from the perspective of audit practitioners in Batna Province?

To answer the main research question, the following sub-questions are posed:

- What is the impact of electronic data processing on the development of auditing from the perspective of audit practitioners in Batna Province?
- What is the impact of electronic data processing on audit objectives from the perspective of audit practitioners in Batna Province?
- What is the impact of electronic data processing on audit methods from the perspective of audit practitioners in Batna Province?
- What is the impact of electronic data processing on audit evidence and auditors' professional competence from the perspective of audit practitioners in Batna Province?

Research Hypotheses:

To answer the sub-questions, the study adopted a main hypothesis from which four sub-hypotheses were derived, as follows:

- **Main hypothesis:** The null form of this hypothesis states:
Electronic accounting information systems have no effect on auditing among audit practitioners in Batna Province at the significance level $\alpha \leq 0.05$.
- **First sub-hypothesis:** The null form of this hypothesis states:
Electronic data processing has no effect on the development of auditing among audit practitioners in Batna Province at the significance level $\alpha \leq 0.05$.
- **Second sub-hypothesis:** The null form of this hypothesis states:
Electronic data processing has no effect on audit objectives among audit practitioners in Batna Province at the significance level $\alpha \leq 0.05$.
- **Third sub-hypothesis:** The null form of this hypothesis states:
Electronic data processing has no effect on audit methods among audit practitioners in Batna Province at the significance level $\alpha \leq 0.05$.
- **Fourth sub-hypothesis:** The null form of this hypothesis states:
Electronic data processing has no effect on audit evidence and auditors' professional competence among audit practitioners in Batna Province at the significance level $\alpha \leq 0.05$.

Electronic data processing has no effect on audit evidence and auditors' professional competence among audit practitioners in Batna Province at the significance level $\alpha \leq 0.05$.

Significance of the Study:

The significance of this study lies in the growing interest of most economic organizations and audit practitioners in Algeria in acquiring the latest electronic systems and software because of their impact on the auditing profession. Advances in accounting information technology have imposed new duties and responsibilities on auditors, enabling them to reach reliable and credible conclusions and express an independent professional opinion on financial reports and statements, thereby enhancing their reliability.

Study Objectives:

In addition to answering the research questions and testing the adopted hypotheses, the study seeks to achieve the following objectives:

- Present and clarify the conceptual framework of electronic accounting information systems and the auditing profession.
- Identify the characteristics, components, and importance of electronic accounting information systems.

- Establish the theoretical foundations of the auditing profession.
- Clarify the impact of electronic data processing on the development and objectives of auditing.
- Clarify the impact of electronic data processing on audit methods.
- Clarify the impact of electronic data processing on audit evidence and auditors' professional competence.

Research Method and Tools:

To address the research problem and achieve the study objectives, the descriptive-analytical method was used to describe the theoretical aspects of the study variables. For the empirical component, an exploratory survey was conducted among a sample of audit practitioners in Batna Province. A questionnaire designed for the study was used to collect data, and statistical methods were applied to analyze the data and test the relevant hypotheses using SPSS.

Structure of the Study:

The study is divided into the following sections:

- **Theoretical framework:** This section examines the theoretical dimensions of the study variables: auditing as the dependent variable and the electronic accounting information system as the independent variable.
- **Empirical framework:** This section presents the methodological framework of the field study, the statistical analysis of the data, and hypothesis testing

Theoretical Framework:

1. Auditing:

1.1 Definition of Auditing:

- ❖ Auditing is defined as a systematic process of obtaining and objectively evaluating evidence concerning assertions about economic events in order to determine the degree of correspondence between those assertions and established criteria, and to communicate the results to interested parties (Al-Matarneh, 2006, p. 13).
- ❖ Another definition describes auditing as a systematic and critical examination of an organization's internal control systems, data, documents, accounts, and records, with the objective of expressing an independent professional opinion on whether the financial statements fairly represent the organization's financial position at the end of a specified period and accurately reflect the results of its operations—profit or loss—for that period (Khaled Amin, 2000, p. 18).
- ❖ The preceding definitions indicate that auditing is a rigorous, structured technical examination—or critical review—of the figures and data recorded in financial statements. It is performed by a professionally and academically qualified person to express an independent opinion on the accuracy, reliability, and representativeness of financial statements for a specified period and on the extent to which users may rely on them when making decisions.

1.2 Importance of Auditing:

Auditing is important because it is a means, rather than an end, that serves many users of audited financial statements. These users rely on the audit report when making short- and long-term decisions and formulating policies and strategies. Examples include management, investors, banks, business and economic stakeholders, government agencies, suppliers, parties dealing with the organization, and trade unions (Wejdan, 2009–2010., pp. 59-60)

1.3 Audit Objectives: The modern objectives of auditing include the following: (Al-Matarneh, 2006, p. 13)

- ❖ Monitoring plans and their implementation, identifying the reasons why organizational objectives were not achieved, and determining deviations, their causes, and appropriate corrective measures.
- ❖ Evaluating achieved results against planned objectives.
- ❖ Achieving the highest possible level of productive efficiency, eliminating waste and extravagance across all organizational activities, and maximizing societal welfare.

1.4 Audit Methods:

Modern audit methods rely on quantitative analytical techniques, including trend analysis, financial ratio analysis, regression analysis, time-series analysis, and statistical sampling tests. These methods support audit planning, substantive testing, and report preparation; they also help identify unusual items requiring special attention and thereby improve audit quality (Farid, 2017–2018, p. C).

1.5 Auditing Standards:

The American Institute of Certified Public Accountants (AICPA) played a leading role in developing these standards comprehensively. At its September 1948 meeting, nine standards were approved; in November 1949, the tenth and final standard—the fourth reporting standard—was adopted. In 1954, the Institute published a booklet entitled “Generally Accepted Auditing Standards (GAAS).” The standards were divided into three groups (Abdelssamed, 2018, pp. 87-88):

- ❖ **General or personal standards:** Standards relating to the personal and professional qualifications, including the academic and practical competence, of those who practice auditing.
- ❖ **Standards of fieldwork:** Standards relating to the procedures used to carry out an audit engagement, such as collecting audit evidence.
- ❖ **Reporting standards:** Standards governing the preparation and required content of the final audit report.

2. Electronic Accounting Information Systems:

2.1 Definition of an Electronic Accounting Information System:

- ❖ The American Information Systems Association (AISA) defines a computer-based information system as “an automated system that collects, organizes, communicates, and presents information for use by individuals in planning, control, and other activities performed by an economic entity” (Al-Bayati & Abdelrazak, 2001, p. 49)
- ❖ It is also defined as “an information subsystem within an organization comprising automated and human capabilities responsible for providing information obtained by processing historical data, in order to support management and external parties in planning, control, and decision-making” (Al-Mutairi., 2012, p. 19).
- ❖ Accordingly, an electronic accounting information system may be described as a broad set of subsystems dedicated to specific areas of data collection and processing through computer technology. It provides the accounting information needed for planning, control, and decision-making in a timely manner, while saving considerable time and effort through electronic applications.

2.2 Characteristics of Electronic Accounting Information Systems: Their main characteristics include the following (Qaaoud, 2007, p. 66); (Hefnawi., 2001., p. 41); (Siam, 2004, p. 24):

- ❖ Speed and accuracy; efficiency and effectiveness; flexibility, reliability, and comprehensiveness; information and data security; maintenance and serviceability; software cost and self-control; the capacity to meet users’ needs and preferences; distinctiveness and privacy; and the ability to keep pace with technological developments.

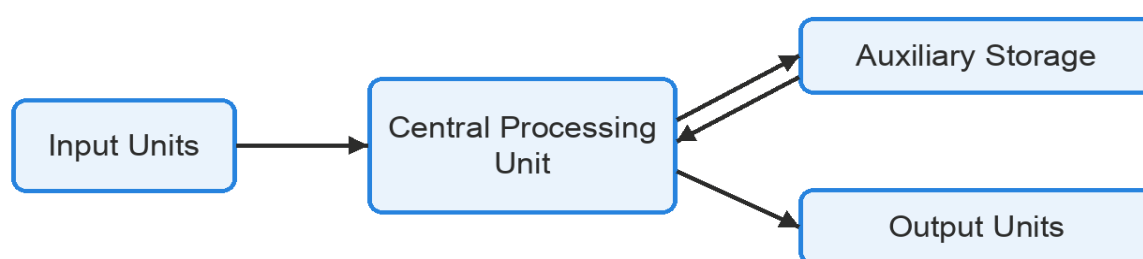
2.3 Objectives of Electronic Accounting Information Systems: These objectives include the following (Fouda, Sayed, & El-Din., 2019, p. 373):

- ❖ Producing the reports required to serve project objectives, whether financial reports, statistical data, or daily or weekly operating reports, and ensuring a high degree of numerical and result accuracy.
- ❖ Providing reports in a timely manner to support management in making appropriate decisions when needed.
- ❖ Meeting internal control requirements, protecting project assets, and improving performance efficiency through system-based controls.

2.4 Components of an Electronic Accounting Information System: Electronic accounting information systems rely on a set of components to perform their functions, classified as follows:

- ❖ **Human resources (people ware):** This component includes all individuals who operate the computer system and perform its various functions, including the information systems manager, systems analysts, systems designers, programmers, computer operators, data-entry personnel, and the control group (Arab Society of Certified Accountants., 2001, pp. 9-10).
- ❖ **Hardware components:** These comprise the physical parts of the system, including data input units, the central processing unit, auxiliary storage units, and output units (Qasim., 2006, p. 23). Figure 1 presents the hardware components of an electronic accounting information system.

Figure 1 :hardware components of an electronic accounting information system.



Source: Abdelrazak Mohammed Qasim, Analysis and Design of Accounting Information Systems, Dar Al-Thaqafa Publishing, Amman, Jordan, 2006, p. 23.

3. Empirical Framework: Following the theoretical examination of electronic accounting information systems and auditing, and of how such systems are used and affect auditing, the study applies these concepts through a field survey administered electronically to a sample of audit practitioners in Batna Province.

3.1 Methodological Framework:

- **Method Used:** Because the study seeks to determine “the impact of electronic accounting information systems on auditing,” it adopts a scientific approach consistent with the descriptive-analytical method, which aims to collect data and facts concerning the research problem, interpret them, and identify their implications.
- **Study Sample and Instrument:**
 - ❖ **Study Population and Sample:** The population comprised all audit practitioners in Batna Province, including statutory auditors, certified accountants, chartered accountants, and university faculty members. Using a representative sample, 40 questionnaires were distributed, of which 38 were returned.
 - ❖ **Study Instrument:** The study used a questionnaire, a common scientific research instrument for collecting information. It consisted of a form containing a set of statements that each participant answered independently, without assistance or intervention. The questionnaire was designed using the Likert scale because it is among the most widely used scales for measuring opinions, is easy to understand, and provides balanced response categories.

The range was calculated as $5 - 1 = 4$ and divided by the number of scale categories to obtain a class width of $4/5 = 0.80$. This value was then added successively to the lowest scale value (1) to determine the upper limit of each category.

Table 1. Likert Scale Categories Used in the Study

Strongly agree	Agree	Neutral	Disagree	Strongly disagree	Response
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5	4	3	2	1	Score
4.21–5	3.41–4.20	2.61–3.40	1.81–2.60	1.00–1.80	Range

Source: SPSS output.

- **Personal Data Section:** This section collected participant characteristics such as gender, age group, academic qualification, field of specialization, occupation, and years of experience.
- **Study Data Section:** This section comprised two constructs:
 - * Construct 1: The independent variable electronic accounting information systems.
 - * Construct2: The dependent variable auditing comprising four dimensions: development of auditing; audit objectives; audit methods; and audit evidence and auditors' professional competence.
- **Questionnaire Validity and Reliability:**
- **Internal Consistency:** The questionnaire's internal consistency was assessed using Pearson correlation coefficients between each questionnaire item and the total score of the construct to which it belonged. This was done to verify the instrument's validity for the sample of 38 participants. A large and statistically significant correlation indicates a high degree of construct validity. The correlation coefficient may be interpreted as follows:
 - 0.3 < R < 0.3: weak relationship.
 - 0.7 ≤ R < –0.3 or 0.3 ≤ R < 0.7: moderate, acceptable relationship.
 - 1.0 ≤ R < –0.7 or 0.7 ≤ R ≤ 1.0: strong relationship.
- A correlation is also considered statistically significant when its associated significance level is small (≤ 0.05). A positive coefficient indicates a direct relationship, while a negative coefficient indicates an inverse relationship (Al-Atoum, 2006, pp. 418–419).

Table 2. Internal Consistency of the Study Instrument

Internal consistency	Construct	
	01	02
Maximum value	0.841	0.823
Minimum value	0.503	0.385
Significance	All values at 0.000	All values at 0.000

Source: SPSS output.

The correlation coefficients ranged from 50.30% to 84.10% for the first construct and from 38.50% to 82.30% for the second. These values represent moderate to strong correlations, with significance levels below 0.05, indicating consistency between each item and the construct to which it belongs.

- **Reliability:** Cronbach's alpha was used to measure the reliability of the study instrument. It is one of the most important measures of reliability because it relates the reliability of the questionnaire to the consistency of its items. The accepted threshold is 60%, and the coefficient is expressed by the following formula (Al-Tayeb, 1999, p. 301):

$$\alpha = n \frac{n}{n-1} \left(1 - \frac{\sum_i v_i}{vt} \right)$$

Where:

n: number of questionnaire items.

Vt: total variance of the questionnaire.

Vi: variance of item scores.

Table 3. Cronbach's Alpha Results for Questionnaire Reliability

Sample size	Number of items	Cronbach's alpha coefficient	Validity coefficient
Construct 1	06	18.26%	19.22%
Construct 2	24	73.04 %	76.88%
38	30	91.3 %	96.1%

Source: SPSS output.

Table 3 shows that the questionnaire reliability coefficient was substantially above the accepted threshold, reaching 91.3%, which indicates high reliability. A higher Cronbach's alpha reflects greater data reliability and therefore greater confidence that the sample results represent the study population. A reliability rate of 91.3% means that if the questionnaire were administered again to the same sample, 91.3% of participants would be expected to provide the same initial responses.

Validity may also be calculated as the square root of Cronbach's alpha. This coefficient indicates whether the questionnaire actually measures what it was designed to measure. The recorded value of 96.1% was well above the statistically accepted threshold, demonstrating the validity of the study instrument.

3.2 Statistical Analysis and Hypothesis Testing:

After the data were coded, entered into a computer, and statistically processed, the study identified a set of findings that helped answer the research questions.

Description of Sample Characteristics:

Frequencies and percentages were calculated to describe the sample. The questionnaire included six questions concerning participants' personal characteristics: gender, age group, academic qualification, field of specialization, occupation, and years of experience. The table below presents the analysis results.

Table 4. Analysis of the Sample's Personal Characteristics

1- Distribution of the sample by gender		
Gender	Frequency	Percentage
Male	23	60.5
Female	15	39.5
Total	38	100%
2- Distribution of the sample by age group		
Age group	Frequency	Percentage
Under 30 years	6	15.8
30-40 years	15	39.5
41-50 years	13	34.2
Over 50 years	4	10.5

Total	38	100%
3- Distribution of the sample by academic qualification		
Academic qualification	Frequency	Percentage
Licence (bachelor's degree)	20	52.6
Master's degree	9	23.7
Magister degree	4	10.5
Doctorate	5	13.2
Total	38	100%
4- Distribution of the sample by field of specialization		
Field of specialization	Frequency	Percentage
Accounting	20	52.6
Finance	06	15.8
Auditing	12	31.6
Total	38	100%
5- Distribution of the sample by occupation		
Occupation	Frequency	Percentage
Chartered accountant	07	18.4
Accountant	08	21.1
Statutory auditor	19	50
University faculty member	04	10.5
Total	38	100%
6- Distribution of the sample by experience		
Experience	Frequency	Percentage
Less than 5 years	08	21.1
5-10 years	08	21.1
11-16 years	13	34.2
More than 16 years	09	23.7
Total	38	100%

Source: SPSS output.

The table above indicates the following:

- ❖ **Gender:** Men represented 60.5% of the sample, compared with 39.5% for women, indicating a difference in representation by gender among audit practitioners.
- ❖ **Age Group:** The largest group, representing 39.5%, was aged 30-40, followed by those aged 41-50 at 34.2%. The remaining groups had relatively similar shares. These results indicate that most people working in auditing are relatively young.
- ❖ **Academic Qualification:** The largest group held a Licence (bachelor's) degree: 20 participants, or 52.6%. This was followed by master's degree holders, with 9 participants (23.7%). Magister and doctoral degree holders numbered 4 and 5, accounting for 10.5% and 13.2%, respectively. This distribution reflects the requirement that accounting practitioners hold at least a Licence degree.
- ❖ **Field of Specialization:** Accounting was the most common specialization at 52.6%, followed by auditing at 31.6%. Finance accounted for 6 participants, or 15.8%.

- ❖ **Occupation:** Statutory auditors represented the largest group at 50%. Accountants and chartered accountants accounted for 21.1% and 18.4%, respectively, while university faculty members represented 10.5% of the sample. Thus, most participants were statutory audit practitioners.
- ❖ **Experience:** The largest group had 11–16 years of experience (34.2%). Participants with more than 16 years represented 23.7%, while those with less than 5 years and those with 5–10 years each represented 21.1%. Overall, the sample mainly comprised practitioners with moderate experience.

3.3 Results Analysis and Hypothesis Testing:

The results are summarized below:

Analysis of Construct 1 Electronic Accounting Information Systems: The results are summarized in the following table:

Table 5. Descriptive Statistics for Sample Responses on the Electronic Accounting Information System Variable

No.	Statements	Mean	Standard deviation	Rank	Agreement level
01	The electronic accounting information system saves time and effort through the use of various electronic applications.	4.42	0.793	1	Very high
02	The electronic accounting information system provides all users with the information and reports they need in a timely manner and at the lowest cost.	4.18	0.896	3	High
03	Electronic processing enables rapid retrieval of stored data and information, allowing previous observations to be reconsidered.	4.16	0.754	4	High
04	Electronic accounting information systems help protect data against manipulation.	4.16	0.855	5	High
05	The electronic accounting information system eliminates or reduces certain paper documents in circulation, thereby shortening the lengthy document cycle.	4.08	0.784	6	High
06	Paper copies of documents are retained alongside electronic copies as audit evidence.	4.32	0.809	2	Very high
Overall		4.21	0.594	/	Very high

Source: SPSS output.

The table shows that the overall mean for all items measuring the independent variable electronic accounting information systems was 4.21, with a standard deviation of 0.594, placing it in the “very high” category. This indicates that respondents strongly agreed that electronic accounting information systems provide substantial support for accounting work. The item-level results show that most participants agreed that these systems save time and effort by providing each user with the required information and reports according to their needs, allow rapid retrieval of data upon request, and provide essential protection against manipulation, fraud, and unauthorized disclosure of accounting documents—an important consideration in auditing.

Analysis of Construct 2 Auditing: The results are summarized in the following table:

Table 6. Descriptive Statistics for Sample Responses on the Auditing Variable

No.	Statements	Mean	Standard deviation	Rank	Agreement level
Dimension 1: Development of auditing		4.19	0.514	/	High
01	The audit process identifies discrepancies in the accounting operations and transactions of the audited organization and determines how they should be addressed.	4.24	0.634	4	Very high
02	Auditing helps verify the accuracy and integrity of accounting entries in the records of the audited organization.	4.37	0.751	2	Very high
03	Auditing helps verify the accuracy and integrity of financial-statement disclosures and whether they present a true picture of the organization's financial position.	4.00	0.805	7	High
04	An academically and professionally qualified auditor expresses an independent professional opinion on the fairness of the financial statements by collecting sufficient appropriate audit evidence.	4.05	0.733	5	High
05	Evaluating the internal control system of the audited organization helps identify material misstatements, risks, weaknesses, and strengths in the system.	4.05	0.733	6	High
06	The auditor's procedures differ between manual and electronic systems.	4.26	0.828	3	Very high
07	Using a chart of accounts in auditing is as necessary for a manual accounting information system as it is for an electronic accounting information system.	4.37	0.714	1	Very high
Dimension 2: Audit objectives		4.21	0.469	/	Very high
01	Analyzing the environmental factors surrounding electronic accounting information systems helps determine system efficiency and effectiveness, thereby improving the quality of financial reports and advancing the auditing profession.	4.05	0.899	4	High
02	The electronic accounting information system affects the scope and objectives of auditing.	3.92	0.997	5	High
03	The auditor is fully familiar with the use of computers, audit software, and their operating systems.	4.50	0.558	1	Very high
04	The auditor assesses the importance and complexity of the electronic accounting information system when planning the audit.	4.45	0.645	2	Very high
05	The auditor understands the nature and structure of the internal control system under electronic data processing.	4.13	0.741	3	High
Dimension 3: Audit methods		4.32	0.453	/	Very high
01	The electronic accounting information system clearly contributes to the development of audit methods and procedures.	4.29	1.088	5	Very high

02	The electronic accounting information system reduces the effort, time, and cost involved in auditing and limits audit-related problems.	4.45	0.555	1	Very high
03	The electronic accounting information system accelerates analysis of financial-report content and enables prompt detection and correction of errors and fraud.	4.34	0.815	3	Very high
04	Electronic data processing enables the auditor to use comparative and ratio analysis and to derive indicators and benchmarks that support rapid monitoring and performance evaluation.	4.32	0.662	4	Very high
05	The electronic accounting information system supports the audit objective of properly safeguarding organizational assets and providing assurance through efficient operation.	4.34	0.627	2	Very high
06	Conducting an audit using general-purpose computer-assisted audit software improves audit quality.	4.21	0.704	6	Very high
Dimension 4: Audit evidence and auditors' professional competence		4.16	0.655	/	High
01	The nature of audit evidence collected under an electronic accounting information system differs from that collected under a manual system.	4.16	0.916	3	High
02	The electronic accounting information system affects evidence-collection procedures through the emergence of electronic evidence and specific controls on which the auditor relies.	4.34	0.669	2	Very high
03	Electronic audit evidence—including electronic documents, confirmations, signatures, fingerprints, and other forms of evidence—is appropriate for forming an opinion during an audit.	4.05	0.957	4	High
04	The electronic accounting information system affects auditors' academic and professional competence by changing their views and thinking about the audit process.	4.00	1.013	5	High
05	The electronic accounting information system affects the steps and stages of auditors' work when they perform audit engagements.	3.89	1.181	6	High
06	The electronic accounting information system helps auditors assess and meet the expectations of financial-statement users.	4.55	0.504	1	Very high
Overall		4.22	0.522	/	Very high

Source: SPSS output.

The table shows that the overall mean for all items measuring the dependent variable auditing was 4.22, placing it in the “very high” category. Respondents therefore indicated a very high level of agreement regarding the auditing construct. The mean scores for the four dimensions development of auditing, audit objectives, audit methods, and audit evidence and auditors' professional competence were 4.19, 4.21, 4.32, and 4.16, respectively.

Normality Test: Testing for normality is necessary for parametric tests, which assume that data are normally distributed. Using SPSS, the following hypotheses were formulated:

H0: the data follow a normal distribution;

H1: the data do not follow a normal distribution.

Table 7 presents the results of the Kolmogorov-Smirnov test for the questionnaire constructs.

Table 7. Kolmogorov-Smirnov Test for the Study Constructs

No.	Constructs	Number of items	Z-value	Significance level (Sig.)
01	Electronic accounting information system	06	0.120	0.133
02	Development of auditing	07	1.311	0.068
03	Audit objectives	05	0.960	0.324
04	Audit methods	07	0.175	0.109
05	Audit evidence and auditors' professional competence	06	0.181	0.101

Source: SPSS output.

The significance levels for the constructs were 0.133, 0.068, 0.324, 0.109, and 0.101, respectively all greater than the adopted significance level of 0.05. The null hypothesis that the data are normally distributed was therefore accepted, allowing parametric tests to be applied.

Hypothesis Testing:

Testing the Main Hypothesis: Electronic accounting information systems affect auditing from the perspective of audit practitioners at the significance level $\alpha \leq 0.05$.

To test the main hypothesis, a null hypothesis and an alternative hypothesis were formulated. The null hypothesis is subject to testing and may be rejected, which requires the formulation of an alternative hypothesis.

- Null hypothesis (H0): Electronic accounting information systems have no effect on auditing from the perspective of audit practitioners at the significance level $\alpha \leq 0.05$.
- Alternative hypothesis (H1): Electronic accounting information systems affect auditing from the perspective of audit practitioners at the significance level $\alpha \leq 0.05$.

Correlation Analysis:

Table 8. Correlations Between the Electronic Accounting Information System Variable and the Dimensions of the Auditing Variable

Independent variable Dependent variable	Correlation coefficient	Significance level (Sig.)
Development of auditing	0.728	0.000
Audit objectives	0.625	0.000
Audit methods	0.729	0.000
Audit evidence and auditors' professional competence	0.391	0.015
Overall indicator	0.708	0.000

Source: SPSS output.

Table 8 indicates the following:

- **Overall level:** The correlation between the independent and dependent variables was 0.708 at a significance level of 0.000. The results therefore confirm a strong positive correlation between the electronic accounting information system variable and the components of the auditing variable.

Dimension level:

- **Development of Auditing:** The correlation between electronic accounting information systems and the development of auditing was 0.728 at a significance level of 0.000, confirming a strong positive relationship.
- **Audit Objectives:** The correlation between electronic accounting information systems and audit objectives was 0.625 at a significance level of 0.000, confirming a moderate positive relationship.
- **Audit Methods:** The correlation between electronic accounting information systems and audit methods was 0.729 at a significance level of 0.000, confirming a strong positive relationship.
- **Audit Evidence and Auditors' Professional Competence:** The correlation between electronic accounting information systems and this dimension was 0.391 at a significance level of 0.015, confirming a moderate positive relationship.

Testing the First Sub-Hypothesis: Electronic data processing affects the development of auditing among audit practitioners in Batna Province. Two hypotheses were formulated:

- **Null hypothesis (H0):** Electronic data processing has no effect on the development of auditing among audit practitioners in Batna Province.
- **Alternative hypothesis (H1):** Electronic data processing affects the development of auditing among audit practitioners in Batna Province.

Table 9. Significance Test of Regression Coefficients Using the t-Statistic

Variable	B	Standard deviation	BETA	T	Significance level (Sig.)
Constant	1.531	0.422	/	3.629	0.001
Development of auditing	0.631	0.099	0.728	6.365	0.000

Source: SPSS output.

Table 9 shows that the regression coefficient for the dependent variable, development of auditing, was 0.631; the corresponding standardized coefficient was 0.728; and the associated t-value was 6.365. The significance level (Sig.) was 0.000, which is below the adopted significance level of 0.05 and is therefore statistically significant. This leads to acceptance of the alternative hypothesis that electronic accounting information systems affect the development of auditing.

Testing the Second Sub-Hypothesis: Electronic data processing affects audit objectives among audit practitioners in Batna Province. Two hypotheses were formulated:

- **Null hypothesis (H0):** Electronic data processing has no effect on audit objectives among audit practitioners in Batna Province.
- **Alternative hypothesis (H1):** Electronic data processing affects audit objectives among audit practitioners in Batna Province.

Table 10. Significance Test of Regression Coefficients Using the t-Statistic

Variable	B	Standard deviation	BETA	T	Significance level (Sig.)
Constant	2.128	0.438	/	4.857	0.000
Audit objectives	0.493	0.103	0.625	4.798	0.000

Source: SPSS output.

Table 10 shows that the regression coefficient for the dependent variable, audit objectives, was 0.493; the corresponding standardized coefficient was 0.625; and the associated t-value was 4.798. The significance level (Sig.) was 0.000, which is below the adopted significance level of 0.05 and is therefore statistically significant. The alternative hypothesis that electronic accounting information systems affect audit objectives is therefore accepted.

Testing the Third Sub-Hypothesis: Electronic data processing affects audit methods among audit practitioners in Batna Province. Two hypotheses were formulated:

- Null hypothesis (H0): Electronic data processing has no effect on audit methods among audit practitioners in Batna Province.
- Alternative hypothesis (H1): Electronic data processing affects audit methods among audit practitioners in Batna Province.

Table 11. Significance Test of Regression Coefficients Using the t-Statistic

Variable	B	Standard deviation	BETA	T	Significance level (Sig.)
Constant	1.977	0.371	/	5.330	0.000
Audit methods	0.556	0.087	0.729	6.391	0.000

Source: SPSS output.

Table 11 shows that the regression coefficient for the dependent variable, audit methods, was 0.556; the corresponding standardized coefficient was 0.729; and the associated t-value was 6.391. The significance level (Sig.) was 0.000, which is below the adopted significance level of 0.05 and is therefore statistically significant. The alternative hypothesis that electronic accounting information systems affect audit methods is therefore accepted.

Testing the Fourth Sub-Hypothesis: Electronic data processing affects audit evidence and auditors' professional competence among audit practitioners in Batna Province. Two hypotheses were formulated:

- Null hypothesis (H0): Electronic data processing has no effect on audit evidence and auditors' professional competence among audit practitioners in Batna Province.
- Alternative hypothesis (H1): Electronic data processing affects audit evidence and auditors' professional competence among audit practitioners in Batna Province.

Table 12. Significance Test of Regression Coefficients Using the t-Statistic

Variable	B	Standard deviation	BETA	T	Significance level (Sig.)
Constant	2.345	0.721	/	3.254	0.002
Audit evidence and auditors' professional competence	0.432	0.169	0.391	2.552	0.015

Source: SPSS output.

Table 12 shows that the regression coefficient for the dependent variable, audit evidence and auditors' professional competence, was 0.432; the corresponding standardized coefficient was 0.391; and the associated t-value was 2.552. The significance level (Sig.) was 0.015, which is below the adopted significance level of 0.05 and is therefore statistically significant. The alternative hypothesis that electronic accounting information systems affect audit evidence and auditors' professional competence is therefore accepted.

Conclusion:

The auditing profession is based on established standards that guide auditors in performing their work. Auditors must be familiar with standards that address the electronic aspects of accounting information systems so that they can overcome technical obstacles and risks and adopt a methodology suited to the electronic environment. They must also develop their own and their teams' information technology capabilities through specialized education and training. A new working environment must be created for the profession and its practitioners, as auditing now requires advanced methods and procedures that keep pace with changes in the audit environment. The use of electronic accounting information systems has significantly improved the audit process by saving time, effort, and cost and by enabling auditors to obtain highly reliable evidence.

Study Findings:

- ✓ Electronic systems enable rapid retrieval of data upon request while maintaining the protection needed to safeguard accounting information against manipulation, fraud, and unauthorized disclosure of accounting documents an essential requirement in auditing.
- ✓ The use of the chart of accounts is equally necessary when auditing manual and electronic accounting information systems.
- ✓ Electronic accounting information systems have a statistically significant effect on auditing among audit practitioners.
- ✓ Electronic data processing has a statistically significant effect on the development of auditing among audit practitioners.
- ✓ Electronic data processing has a statistically significant effect on audit objectives among audit practitioners.
- Electronic data processing has a statistically significant effect on audit methods among audit practitioners.
- Electronic data processing has a statistically significant effect on audit evidence and auditors' professional competence among audit practitioners.
 - ✓ Auditors' work procedures differ between manual and electronic systems.
 - ✓ Auditing helps identify differences in accounting operations and transactions and verify the accuracy and integrity of accounting entries in an organization's records.
 - ✓ Evaluating the internal control system of the audited organization helps identify strengths and weaknesses, financial-statement misstatements, and associated risks. This is achieved through professional reports containing an independent, evidence-based opinion supported by sufficient audit evidence, thereby enhancing the credibility of the auditor's opinion on the organization's financial statements.

- ✓ Auditors must be fully familiar with the use of computers, software, and electronic accounting systems employed in auditing, and must understand their significance and complexity when planning the audit.
- ✓ Auditors must understand the nature and structure of internal control under electronic data processing and analyze the environmental factors surrounding electronic accounting information systems in order to assess their efficiency and effectiveness, prepare high-quality financial reports, and improve practitioners' professional competence.
- ✓ Electronic accounting information systems save effort and time, accelerate the analysis of financial reports, and reduce audit problems and errors through advanced analytical techniques, comparisons of indicators and ratios, and performance-evaluation measures. This supports the achievement of audit objectives, safeguards organizational assets, and helps ensure continuity of operations.
- ✓ Electronic accounting information systems help auditors assess and meet the expectations of financial-statement users. They also affect procedures for collecting electronic audit evidence through specific controls on which auditors rely.
- ✓ The nature of audit evidence collected under an electronic accounting information system differs from that obtained under a manual system, yet it remains appropriate for forming an audit opinion.
- ✓ Electronic accounting information systems affect auditors' academic and professional competence by changing how they view and approach the audit process, as well as the steps and stages they follow when performing audit tasks.

Study Recommendations:

- ✓ Strengthen and activate the role of auditing to ensure the integrity, accuracy, and transparency of organizational financial statements and to assess the organization's financial standing in its market.
- ✓ Continue conducting audits using electronic accounting processing systems, which help diversify and develop audit methods and improve the quality of financial reporting.
- ✓ Strengthen controls over electronic processing by establishing effective control procedures.
- ✓ Leverage rapid developments in electronic processing systems to modernize audit methods and continuously improve them.
- ✓ Train and qualify auditors to keep pace with developments in electronic processing systems through specialized training courses.

Directions for Future Research:**Future research may address the following topics:**

- ✓ Risks posed by electronic accounting information systems to auditing.
- ✓ The role of electronic accounting information systems in enhancing the credibility and reliability of financial information.

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